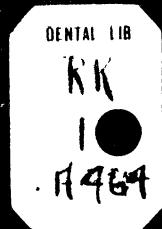
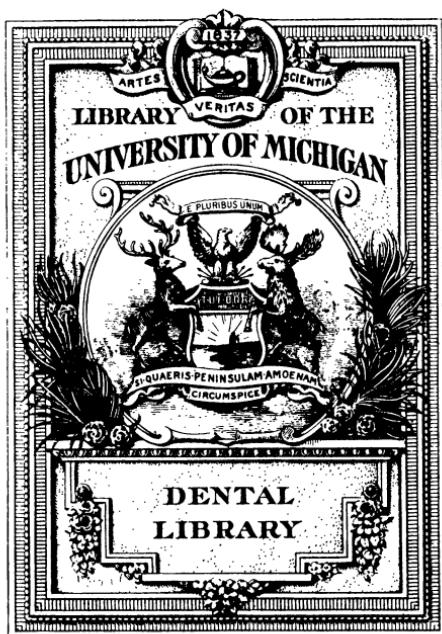


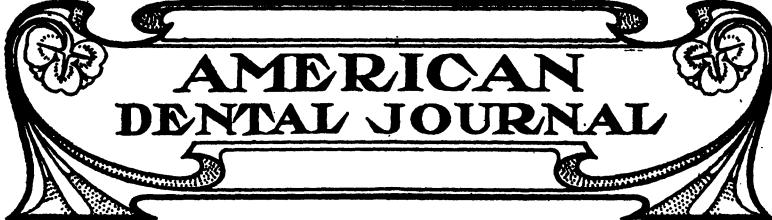
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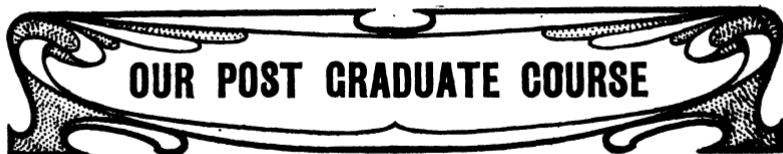
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OUR POST GRADUATE COURSE

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.

COMBINATION OF CAST GOLD AND PORCELAIN.

At the December clinic of the Chicago-Odontographic Society there was exhibited by Dr. C. E. Bentley of Chicago a most unique method of combining cast gold and porcelain in an inlay for a superior central incisor with a conspicuous broken corner.

The method of procedure of this operation is certainly practical and worthy of extensive adoption by dental practitioners; since the artistic and esthetic are as much to be considered by the up-to-date dentist as strength and serviceability.

In the case in question the cavity was made to involve another on the opposite side of the tooth (but not labially exposed), by cutting a channel between the two, and also cutting away the incisal edge of the palatine plate of enamel sufficiently to insure a strong and substantial connection of the two parts in the finished inlay. Protection of the incisal edge of the labial enamel plate was also provided by a reinforcing edge of gold. Thus the cast gold inlay filled both cavities and connecting groove, and provided for itself an exceptionally strong cavity hold.

Now at this stage of the procedure, the exposure of gold at the broken corner was objectionable. Dr. Bentley then proceeded to cut a cavity in this gold, encompassing almost the entire exposure in such a way as to enable him to bake in low fusing porcelain of the proper shade to match the tooth; and which, when finished, had almost the esthetic appearance of an all porcelain inlay, but a mere line of gold reinforcing the incisal border being visible,—an inlay in an inlay—presenting on the whole a perfectly artistic piece of work, and as esthetic as stability would permit. One could hardly say the little gold exposed was even objectionable.

Along that portion of the gold inlay abutting the enamel of the tooth the gold had been cut very thin and then burnished to the enamel while in the tooth before baking, to a hair line scarcely showing in the finished inlay. At the incisal edge, too, the finishing was done so as to provide protection of the porcelain, while but a dainty line of gold was visible continuous along the entire incisal edge of the tooth, affording protection in the same way to the natural enamel. On the whole, all observers pronounced it an ideal sort of filling.

Now, if one comprehends the character of this combination, it may readily be seen that the application of the idea is altogether consistent as a facing for any portion of cast gold inlay or crown work where the strain of mastication does not come on it. Naturally, it must be reasonably protected against an occlusal force it is not calculated to withstand; and while occlusally gold must show as in all porcelain faced work, there can be little danger of splitting off this kind of a facing, if good judgment is used in preparation of the cavity for the porcelain, which must be retentive (slightly under cut at susceptible points) and made with proper calculation to avoid occlusal stress.

Nothing works so well in this method as pure gold, but on account of its softness and susceptibility to spread where occluded contact is severe, 22k. gold would in some cases be better; but in baking it comes out badly oxidized and must be submitted to a bath of dilute sulphuric acid, the same as other kinds of work in gold less than 24k.

This sort of combination is a class of work that is somewhat delicate and exacting in technique and manipulation, and must be watched very closely in baking to avoid approaching the danger line of melting down the gold and necessitating an entirely new beginning. With the usual furnace for baking, and a current whose voltage is constantly fluctuating, one cannot safely figure on timing, as we do with high fusing porcelain; but should depend on the eye to note when the porcelain is fused, and then shut off the current. It would be well for those who desire to undertake this work to experiment prior to baking in melting down some gold foil pellets. With the Hammond furnace and Brewster's low fusing body the writer does not go above the 2d step. This low fusing body fuses at 1,500 degrees. Gold fuses at about 2,000 degrees. There is plenty of safety

margin; but it does not take long with electricity to jump up 500 degrees. As to other low fusing bodies, the writer has had no experience, hence can give no information. It may be that a much lower fusing porcelain than the one named may prove quite as satisfactory for this work, since we figure on putting it to no strain. A porcelain has been exploited which fuses over an alcohol flame. If this answers, it would surely simplify the work.

In regard to obtaining close matching shades, that, too, will require some experimenting, since the conditions differ materially from the usual baking of high fusing porcelain in a platinum matrix. This sort of facing will always have its yellow gold backing, and no cement comes in contact with it in setting to change the shade.

Perfection in shading is always a matter of personal equation—the artistic taste and ability of each operator. One thing evident: there will be no change upon setting the inlay, as occurs with all-porcelain. The piece may be tried in at will, and if the shade has not been well selected the porcelain may be chipped out and a new selection baked in.

It is well understood how difficult it is, sometimes, to get a good secure cavity hold for an all-porcelain inlay; and also how in gold such holds may be gained by extensions, projections and mechanical means that would be impossible in frail porcelain; and so it will be seen how with this combination esthetics and strength of hold may both be secured.

Cast gold crowns and bridge work are susceptible to this sort of facing at exposed portions. When one remembers the improved appearance of a well-fitted, open-faced gold plate crown (even with a limited exposure of the tooth) over an all gold front, it may be realized how this idea of baking in some porcelain when desired may improve cast gold inlays, crowns, etc., that may have advantages over the use of such facings as have heretofore been in use. At all events it has its use and will find favor with many, no doubt.

Now, as to preparation for the porcelain. If the place to be faced is small, it no doubt will be easier to make the cavity as desired in the cast gold itself; but in larger areas the excavations may be made in the wax model—that is, to some extent, so that little will be left to be carved out in the gold. In either or any case the work must be most carefully done. In many cases an approximate cavity may

be made in the wax model, but delicate borders would better be left to be worked in the gold after casting. In some of the hard kinds of wax, the excavating may be easily done by the use of sharp burs in the engine. Or the Roach method of suction carving may be used, keeping in mind the importance of not taking any chances of distorting the model. With the Roach carver no force is used at all; hence the carving may be done with the model poised on a pointed instrument or on the sprue former. But the finishing of this carving must be left to be done in the gold; and especially when the gold in an inlay is to be cut down as thin as tissue paper. It would hardly do to cut out as thin as that in the wax. In investing such model, care must be taken to get the investment into the cavity and under cuts without air bubbles.

While the porcelain must be held in the gold by some undercuts, it does not preclude using some beveled margins along some borders of the cavity to subdue the gold exposure and extend the porcelain surface as much as possibly consistent with strength. Of course the porcelain should not be extended in a thin frail veneer, and it should define accurately the margins of the cavity it occupies in the gold—not lap over.

(To be continued.)

“SOFT” AND “HARD” TEETH.

It may now be regarded as firmly established that dental caries does not occur because of any faults in the calcification of the teeth further than that pits, grooves and accidental physical imperfections give greater opportunity for the cause of caries to act. Also that there is no such thing as soft teeth and hard teeth, in the sense that these phrases have heretofore been used. Neither susceptibility to decay nor immunity from decay are in any wise dependent upon variations in chemical composition of the tissues of the teeth, but must be dependent upon the oral secretions and what they may contain that enables the fermentative process to develop substances that may act upon them, and localize that action.—*G. V. Black, Chicago, Dental Review.*

BACTERIOLOGY AND PATHOLOGY.

BY GEO. W. COOK, B. S., D. D. S., CHICAGO, ILL.

DEAN OF DENTAL DEPARTMENT, UNIVERSITY OF ILLINOIS; PROFESSOR OF BACTERIOLOGY, UNIVERSITY OF ILLINOIS.

In the previous paper we have gone over some of the common forms of digestion, together with the intricate problems pertaining to fermentation. But the problems that are of the greatest interest to us are those pertaining to the etiology and pathology of the oral cavity. If we were to discuss at great length all that pertains to fermentation, putrefaction and disease, we would be so completely overwhelmed with experiments that prove and disprove each other, and possibly we would then be at a greater loss to actually explain many phenomena.

In the simple digestion of food materials for the animal body we have briefly gone through a very intricate problem in this process. It has practically been proven that there are three great groups of chemical agents of which there is one or the other of this group that will furnish some compound in the process of its breaking up. These three great groups, as we have previously stated, are the aldehydes, alcohols and acids, or they might be changed around and said to be acids, aldehydes and alcohol. Some authors put one and some put the other of these three first, but it makes but little difference, they are all more or less reversible in their reaction.

There is a class of food materials that comes under the head, or practically under the head, of carbohydrates that is a foodstuff rich in itself. There are many of these compounds that can be taken from this material which I have reference to here as milk. It might be well for us here to consider for a moment something of the origin of milk. We are aware of the fact that milk is a chemical constituent of the mammary glands. These glands have been but little studied, other than perhaps to say that the histological cell of these glands are rich in proteids and nucleo-proteids. Some of these elements yield pentose and guanine, while others yield a purin. Especially will the last two named extracts be secured if the glandular structure be boiled with dilute mineral acids.

Cow's milk, the most common class of milk used in civilization,

contains very finely divided fats suspended in solution of proteids; then there are some mineral salts and a milk sugar which are suspended in solution. This food compound is more or less of a translucent appearance, and the qualities of fat that are present give it more or less an opaque appearance. Milk from different animals varies considerably in its general characteristics, and even a variation may occur during the lactation period of the same animal. The specific gravity varies from 1028 to 1059 C. Perfectly fresh milk is usually amphoteric to litmus. The acidity or alkalinity of this amphoteric reaction has been studied by Thorner, Sehelien, Courant and a number of other prominent investigators. Courant determined the alkalinity by a normal tenth sulphuric acid, using black lacmoid as an indicator. The acid part of this compound has been determined by a normal tenth of caustic soda, using phenolphthalein as an indicator. It was found by Courant that the ratio of acid and alkalinity was about 41 to 19, showing that as a rule taking all classes of milk from a herd of twenty cows contained more of the acid radical than it did of alkalinity. This may account, however, reasoning as we must from analogy, that when perfectly sterile fresh milk is allowed to remain for an indefinite period it becomes slightly acid. The majority of investigators more recently have alleged that lactic acid formation in milk is not one of a natural phenomena of the milk itself, but that it is the result of bacteria or their products, and that after the sterilization of milk, if lactic acid is formed at all, it is due to some enzyme that the micro-organism has left in the milk.

These questions are of more or less importance to us in the fact that we are dealing mostly in the mouth with a food material contaminated with bacteria, and the rapidity with which bacteria can produce chemical changes in the milk is one that startles most every investigator. The sugar of milk or milk-sugar is in such state that it is easily and quickly acted upon by bacteria, and especially by the bacillus lacticus as studied by Huppe. But the thick, ropy, slimy mass in which milk is sometimes converted very quickly is caused by a special micro-organism that seems to be almost universally present in most all milk, but some milk undergoes this change much more rapidly than does others. When the lactic acid bacillus is present the formation of lactic acid seems to be an essential product,

and it has been found that the formation of lactic acid is through the formation of succinic acid. Some authors claim that the formation of lactic acid cannot take place until first the succinic acid is formed.

The globules that are sometimes observed in milk are composed almost entirely of fat. However, it has been observed through investigations that there may be some proteids in fat globules that are universally present in all milk. This fat is extracted very slowly with certain quantities of ether, and the compound of ether and the milk globules will not precipitate fats unless there is considerable acidity or alkalinity of the milk at the time ether is present in the combination. This milk fat, which is ordinarily designated as butter, is composed almost entirely of olein and palmitin. There are, however, traces of other agents in the so-called milk fat that are always variable in quantity and may be entirely absent in some classes of milk, while in considerable quantities in others. The principal constituents outside of the two previously named are triglycerides, myristic acid, stearic acid, and traces of lauric acid, then occasionally there are traces of butyric acid and caproic acid.

The quantities of volatile fatty acids are so variable, so general in a few classes of milk and so uncommon in other classes of milk, that it makes it more or less of a difficult matter to come to any definite conclusion as to what the chemical constituents of milk consist of constantly. It has been shown that the plasmia of milk holds in general suspense the fat globules, and that this plasmia contains the principal proteid substance that has been found in the analysis of milk. The lactoglobulin and casein-albumin, lacto-albumin, and traces of urea, creatine, hypoxanthine, lecithin and cholestrin are found in milk. Soxhlet and Henkel have shown that citric acid is also quite common in some classes of milk. It will be understood that all of these constituents herein named are of uncertain quantity and their presence in some classes of milk is extremely uncertain. Therefore, in the discussion of milk as a food for higher forms of animal living organisms, as well as the lowest forms of vegetable life, it is a product extremely uncertain, and especially uncertain with the action of bacteria.

Milk in itself contains enzymes of various kinds. Among the most prominent of these enzymes we might mention catalase, oxi-

dases and peroxidases. These enzymes occur alternately in various kinds of milk; for instance, there is a saccharifying action enzyme in the human milk that does not occur in any of the domesticated animals, so far as has been ascertained.

There is a proteolytic enzyme that occurs in certain milk, and has somewhat the same action on the products of milk that the proteolytic enzymes of pancreatic origin may produce in general. This enzyme is generally spoken of in the analysis of milk as galactase. It has chemically very much the same form as trypsin. This enzyme produces ammonia in decomposition of milk.

The milk sugar plays an interesting part in the products of milk, and without this ingredient these enzymes would play no great and important part in the chemical rearrangement of perfectly sterile milk. As we have previously stated, milk ordinarily undergoes certain chemical changes even though it be in a perfectly sterile condition. But as a rule it is practically impossible to sterilize milk without heat sufficient to change it chemically, or some of the chemical agents that act as antiseptic would also change it chemically. It will be remembered that we stated that milk as a food product came under the head of carbohydrates, but this carbohydrate substance differs in its general characteristics to that of carbohydrates found under some circumstances; for instance, like the grain of starch found in cereals and many other sources of carbohydrate substance.

Lactose or milk sugar is extracted from milk by the hydrolytic splitting of hexoses, dextrose, and galactose. When this sugar is acted upon by nitric acid we have lavulinic acid formed, also formic acid. These acids are not always present in very large quantities because we have previously stated that the reaction of milk is amphoteric, consequently it must be so that it can be converted to either an acid or alkaline media. This alkalinity must consist principally of two very important things. One is that it can, by hydrolytic cleavage, change the sugars into acids, and this especially must be true with certain bacteria. However, it is a well known fact that the milk sugar is not fermentable by the action of the yeast fungus, although there are certain schizomycetes that are capable of changing milk sugar by first splitting it into dextrose and then galactose. But the bacteria must contain a lactase in its own body cell in order that this chemical change can be produced. And

this process of fermentation results in a product known as kumyss, which is from mares' milk, and kephir which is from cows' milk. If the lactic acid bacillus is present in any very great quantities neither of these agents can be produced in fermentation. The lactic acid bacillus apparently has the ability to convert directly milk sugar into lactic acid, but this may be very largely due to certain of these enzymes that we have previously stated were always present in milk sugar, or, in other words, in the milk.

(To be continued.)

**"A LITTLE LEAVEN LEAVENETH THE WHOLE LUMP"—
"CLEANING" MUST GO.**

A recent writer has objected to the term "cleaning the teeth," as being undignified and unprofessional, and he claims that we should no more speak of cleaning a patient's teeth than we would think of cleaning her ears or her nose. "Prophylactic treatment" has done much to elevate the cleaning of teeth. Adopt both the term and the method and you will convince yourself and your patient that you have rendered a service worthy of a higher fee.—*Dr. Arthur Kidder, Dominion.*

We should drop the phrase "tooth-cleaning" from our vocabulary and educate our patient to do the same. If a woman were to go to a hair store and tell the person in charge that she wanted her hair cleaned, she would be met with a cold look of disapproval. If you are in doubt, some time ask your manicure to clean your nails, and watch the effect.

Why should Mrs. Smith ask for a shampoo or a manicure and on her way home drop into her dentist's office and ask for an appointment to have her teeth cleaned? Who is responsible for this condition of affairs?

People have been educated in other lines, but not in dentistry, and until they are educated in refinement of expression our services will not be appreciated.

It rests with ourselves as to how soon a change will be made.

It is our own fault that we are asked to clean teeth.—*Dr. Grace P. Rogers, Dental Register.*

Our Foreign Department

THOMAS L. LARSENBUR, D. D. S., Foreign Department Editor

ATROPHY OF THE ALVEOLAR PROCESS.*

BY DR. MICHEL WURZBURG.

Translation Requested by Dr. L. P. Haskell.

(*Le Laboratoire et le Progres Dentaire Reunis*, Paris, Nov. 22, 1908.)

I conceived the idea of this paper while reading an article of Professor Stolze of Berlin, published in *Zeitschrift fur Neue Physik. Medizin*, Dec., 1907.

In reading over this study on *atrophy of the alveolar process* I was asking myself if it was not our duty to teach to physicians and professors the advantages of a practical method of replacing missing teeth.

We are somewhat responsible for the false idea that physicians have on atrophy of the maxillary and its outcome. In fact, all scientific communications pertaining to this subject, with very few exceptions, are published in dental journals only, and papers on the technic of atrophy of the maxillary are read before an audience composed exclusively of dentists; under such conditions we should not be astonished in the least that such false ideas have been created in the medical profession. Physicians and professors are well taken up with their practice and with their own literature on medical subjects without having time to read our dental journals.

Before taking up with you the study of Professor Stolze, I would like to call your attention upon a subject which is not unknown to you: Senile atrophy of the maxillary and that of its soft tissues. Everyone is familiar with the changes which take place in the face of an old person deprived of teeth; the cheeks are caved, parchment-like skin, with the lips covering the maxillary inwardly. Almost all the wrinkles become deeper.

*Paper read at the annual meeting of the Dental Society of Frankfurt-sur-Mein, May, 1908.

The first cause of these changes is the absence of all the teeth, the outcome of which is the shrinking of the upper and lower maxillary and the disappearance of the substance of the muscles, of the skin tissue and the adipose tissue and by the decrease in density of these three tissues.

The shrinking of the alveolar process has not yet been proven as the only factor in these changes of physiognomy. Certain people from 40 to 50 years of age, by premature extraction of all the teeth, have sustained a total atrophy of the alveolar process in both upper and lower maxillaries, without, however, having the appearance of old people, as their muscles, which were still young and strong, kept the contour of the face.

The senile inferior maxillary is absorbed to the bone in such a manner that it takes a peculiar form or shape. In cases of more advanced atrophy we will find a greater variety of shapes, forms and sizes corresponding to the diameter of the lower maxillary.

In a case of atrophy which is not well developed (where there is one-third inferior of the alveolus left) the inferior maxillary is pointed in the region of the anterior teeth, and is wider towards the regions of the bicuspids and molars.

In a well developed case of atrophy (where the maxillary bone only is existing) the maxillary is very much wider in the region of the anterior teeth, this being caused by the extern and intern protuberance becoming narrower in the region of the bicuspids and becoming again wider in the region of the molars. The internal protuberance of the chin is in most cases absorbed, also the muscular insertions; the lines and rugosities are much smaller, especially at the coracoid and condyloid process, where the shrinking is very noticeable.

At the condyle plan, the surface of articulation is often displaced forward. In the bony convex and concave surfaces which form the articulation, incrustations are found which undoubtedly influence the articulation; where these incrustations are found, the function of articulation is not performed with so much ease, and they are altered and consequently they have favored the formation of deposits, such as calcium deposits. The angle of the maxillary, where the muscular insertion is found, is flattened because a good portion of the bony substance has disappeared by absorption. This is due mainly to the inactivity of the muscles. For the prac-

titioner this skeleton of mastication (inferior maxillary) is of main importance. We find in a number of cases, specially those where absorption is well marked and where the maxillary is noticeably reduced, a pointed crest, rough, having very fine growths. This will explain to you why in certain cases, after having exercised the greatest of care in the construction of a plate, the patient returns, complaining that the plate irritates his gums or that it is too heavy. This sharp edge of the bone, under the slightest pressure, causes an irritation of the mucous membrane, constantly inflicting pain to the patient.

These same rugosities are sometimes found in certain lower maxillaries at the mylo-hyoid line.

Phenomena of a greater importance yet, are found in the atrophy of the alveolar process of the upper maxillary.

Whilst the lower maxillary, with its numerous muscular insertions, is bound to remain intact in shape, the alveolar process of the upper maxillary (*per contra*), in a well-marked case of atrophy, will shrink to such an extent that there will be nothing left of it but a boney plate, which, moving forward in the buccal cavity, becoming more and more atrophied, will soon become so thin that perforations are likely to take place. In such cases the maxillary sinus is separated from the buccal cavity by a thin wall having the thickness of a sheet of paper. The spheno-maxillary region of the bones has also become thin, and is likely to crumble; from this atrophy, the superior maxillary has almost a flat surface in the buccal cavity, the palatine processes are on the same line as the line of mastication and the roots of the zygomatic process. The border where the mastication takes place has become wider in pursuance of the atrophy of the zygomatico-molar region.

In cases of atrophy, the process which takes place in the interior part of the bones are, at an histological point of view, the same as physiological resorption of the bones in general. The connective tissue, in the canals of Havers, becomes thicker, increasing the number of its cells and allowing the escapement of white blood corpuscles from the blood vessels which increases the concentration of the existing cells; in a few words, a tissue is formed which has the appearance of a granulated inflamed tissue, with the difference that it has a greater tendency to proliferations and suppuration, whilst in cases of atrophy this process takes place very gradually and slowly.

Instead of small particles of pus, adipose cells are deposited on the connective tissue, growing up (increasing in volume and in number).

The canals of Havers are enlarged until the walls of separation disappear. Thus is produced osteo-porosis, which alters the structure of the bones more and more until it has reached its periphery, converting it into marrow, adipose tissue, with but few bone supports in its center. By removing a thin layer of the spongyous substance of an atrophic bone and by staining it with carmin, here is what we notice under the microscope (Figs. 1 and 2): (These cuts will appear in the next issue.)

In the center are found bone tissues which are still well preserved, having osteoblasts at the periphery of each part and also having an edge which has a deeper color caused by the carmin, this edge has the appearance of a bone which has been decalcified by an acid.

What acid could be the cause of this phenomena? Carbon dioxid should be first thought of, as in cases of atrophy caused by old age, the activity of the heart is decreased, and the oxygenation of the blood is not sufficient, consequently an accumulation of carbon dioxid in the tissues will occur, the circulation taking place very slowly. But this does not account for the decalcification which takes place in youth.

It has not yet been proven that the osteoclasts which are found in every case of bone resorption have any connection with the formation of acid.

After decalcification, there is dissolution of the cartilaginous tissue, and in its place connective tissue filled with adipose cells, as above mentioned, is formed.

If we examine a small layer of the upper maxillary wall, we will readily see spots where nothing else but Howship's lacunæ are found and where all the small bone cells have disappeared.

The process of atrophy may be explained in the following manner: In place of bone substance, a granulated tissue, rich in vessels, has developed. If we observe the venous hyperemia of this tissue, we will remember having seen the same condition in cases of osteomalacia.

Quite a number of authors rank senile atrophy of the bones in the same class as osteomalacias, for anatomical and pathological figures of both are the same; pathogenesis of these cases is almost similar

and finally senile atrophy, as I have remarked previously, very often brings forth a process of inflammation.

We are not very well informed on the etiology of osteomalacia. All we know is that it is more common with women than men, and this is the reason why it has been reputed as the outcome of some special women disease.

If we consider the growth of bone, we will notice that this growth does not take place by the simple multiplication of the cells, but by a deposit, by apposition of new cells and by resorption of old cells and that a tissue always precedes the bone, whether it is a connective tissue or a cartilaginous tissue; in all event, a change of substance will accompany the growth of the bone.

It is then necessary that when the bone is formed, connective tissue, osteoblasts and osteoclasts are present. The osteoblasts form the elements necessary to the formation of the connective and cartilaginous tissues.

This phenomena takes place, as it has been above described, with regularity in all cases of atrophy.

But, if this uninterrupted cycle, one of the factors above mentioned becomes insufficient, the formation of the bone may suffer from it and its development will be impaired; regressive formation will take place. This process is directly controlled by the nerves.

We all know that diseases, irritations, uneasiness may lead to premature senility.

All processes, having a fatal action upon the functions of nerves, such as chronic constitutional diseases and cases of chronic infection, affect the growth of bone in two different ways.

First, they are phenomenas, degenerating from the central nervous system, the outcome of which will often cause destructive changes to the periphery of the bones (preventing or accelerating their growth); secondly, the action of the local irritation to the cells, whether the osteoblasts are growing rudimentary. Senile atrophy of the maxillaries is a physiological phenomena, as it occurs at a given period, and it may be found in all animals; after a certain period changes in the bone structure are also found. Domestic and wild animals show shrinkage of the maxillary bones and a change in the texture of said bones.

(To be continued.)

RELATION BETWEEN THE DISEASES OF THE EYE AND THE DISEASES OF THE TEETH—OCULO-DENTAL PSYCHOSIS.

BY DR. M. BOREL, OCULIST.

(*Le Laboratoire et le Progres Dentaire Reunis*, Paris, Oct. 25, 1908.)

I will limit myself in this paper to the special chapter which is yet somewhat unknown, and on the new treatment of *oculo-dental psychosis* or visual auto-suggestion consecutive to the diseases of the teeth; in other words, I will confine myself by making a study of these cases of special ocular hysteria which develop in pursuance of dental caries or dental operations; as I will go ahead with this subject I will attempt to reform the diagnosis, somewhat mystic, of these strange and obscure cases which have been published by a few authors.

Hoping that this study will enlighten the relations between the eyes and the teeth and the reciprocal influences that these organs, which are above all very delicate and sensitive, may have on subjects who are very nervous.

A thesis entitled "*The Hysterical Eye*"² has been published. This paper could, by parallelism of neo-medical nomenclature, be termed, the *Hysteric Tooth* or *Oculo-Dental Hysteria*; the tooth may be considered as a *hysteroogene* point, as a spasmo-producer or a spasmo-frenateur organ.

The teeth and eyes are both supplied by the trifacial nerve, and are both in fact very, very sensitive. They are near neighbors, and brought into relation by bony cavities, which may become readily infected. They necessarily must have pathological relations.

Diseased teeth, which are the pathway of buccal infection, must have the power of carrying to the eye and orbital cavity innocent and dangerous germs.

Dental caries which are not well treated, decayed roots, which absorb microbes night and day, must—insiduously or during the course of the painful hours of alveolar pericementitis—carry through the lymphatics and blood vessels their toxines to the orbital cavities.

1. Paper read before the Odontological meeting of Neuchatel, May, 1908.

2. Pansier, Thesis of Montpellier, 1891.

The real scientific study of relation between the diseases of the eyes and the diseases of the teeth are quite recent and reckons phases which are very characteristic. Galezowski has the merit of being the first to call our attention to the possibility of relations of oculo-dental pathology. He was convinced to such an extent that certain diseases of the eyes were caused by the diseases of the teeth that when he verified an affection of the membranes of the innermost part of the eye, retinitis or choroiditis, or an iritis or a keratitis, he would invariably say to his patient: "Open your mouth," (*sic*) and seeing a root an innocent case of caries, he would say: "There is the source of your trouble; there is the root causing all your eye trouble." He was persuaded of having found the etiology *quasi-universal* of ocular diseases.

Galezowski "Augenkesionen in Folge Krankhafter Veraendernung im Trigeminusgibet squeziel in Folge von Zahnofectionen" (*Deutsch Monatschrift f. Zahnheilkunde*, 1889) said that weakness of accommodation is really the most frequent affection caused by dental caries. He furthermore claims that extraction will cure cases of ocular neuralgia which derive from troubles of accommodation.

The hyperesthesia of the dental system must be the apparent and the occasional seat of psychic affections, which with impressionable subjects are imposed upon by organic affections, and we will take a wrong course if, following Galezowski and his school, we get to the point of establishing anatomical relations between the eye and the teeth, and if we imagine ascending neuritis of the teeth, carried to the Gasserian ganglion, descending from this ganglion to the ocular globe.

This pathology, which was radically wrong, has encumbered science since 1870, and I find the basis of its etiology false, even in its most recent publications.

Let us take now a case which has been recently published in *L'Odontologie* of the 15th of June, 1907, the official review of the Dental School of Paris, by M. Dr. Senn of Zurich.

This paper relates to a case of amaurosis following the extraction of a tooth, of which the description of this case was given in *La Stomatologia* of July, 1906, and which we do not reform the entire diagnosis, would appear as one of these mysterious and insolvable cases, and would bring forth this question: Can the extraction of a

tooth be the cause of cecity? Let us resume the case entitled: *A case of amaurosis following the extraction of a tooth.*

A soldier, artist painter by trade, was one day suddenly afflicted with a severe case of odontalgia. After being examined in the military school of health of Florence his first right upper molar was removed. The tooth was affected with caries, fourth degree. A few hours later he complained of severe neuralgic pains extending from the right cheek to the right eye, with a slow and progressive weakening of the eyesight till *complete cecity of the right eye had taken place.*

This condition persisted for four days and suddenly disappeared, and this amaurosis was followed by a severe case of amblyopia. The examination proved that the *visual field was restricted right and left*, but more so on the right side than on the left, with a quite developed case of dyschromatopsia for green and blue.

The external examination proved nothing very remarkable; no lesions in the mouth; slight degree of pharyngeal anesthesia.

(To be continued.)

A NEW METHOD OF FASTENING PORCELAIN TEETH TO CROWNS AND BRIDGES.

BY DR. M. F. SAMUEL.

(Svenek Tandlakare Tidskrift.)

Broken porcelain molars or bicuspids are extremely difficult to replace if the bridge is stationary, and cannot be removed from the mouth for repair. Take the case of an upper bridge extending from the root of a canine tooth to the second molar, the intermediate roots missing.

After a Richmond crown is fastened to the root of the canine and a gold crown to the molar, a plaster impression is taken with these teeth *in situ*, the mold is cast and articulated.

The porcelain teeth are selected, using a canine for a bicuspid, and a flat porcelain tooth for the molars. The teeth are ground, and the incisive edge is beveled toward the pin. The pins are bent to an angle as nearly right as possible, so that they form a ring. With a piece of platinum foil $1/10$ mm. in thickness, around every pivot a

sort of small case is fitted by first folding the platinum foil of the desired length around the pins, and soldering the free ends together with fine gold.

Then a bottom is secured for this case by means of a small piece of platinum foil soldered with fine gold. The backing is made of platinum foil $2/10$ mm. in thickness, and carefully adjusted, allowing it to extend a little over the incisive edge of the tooth.

In this backing, in place of the pivots, an opening is made large enough for the described box to fit. Tooth, box and backing are fastened together in their respective positions by means of wax to insure an exact fit. Then box and backing are soldered together with fine gold. The teeth are set up on the model with the backings and in the pin cases, and the occluding surfaces and lingual facings are modelled in wax. Care must be taken that the pressure of mastication is not directed against the extreme edge of the porcelain teeth. The pressure must come to lie entirely on the metal, not on the porcelain part. The occluding surface can be stamped up from a sheet of gold foil and the lingual portion filled with solder, or cast together with the backings and the pin cases. As an investment for these backings and cases a mixture of 2 parts of plaster and 1 part of sand, or still better, of plaster and asbestos, are recommended. When the masticating surfaces and the lingual facings are finished, the teeth are removed, and all the metal parts are soldered to one another and to the supporting bars of the bridge.

It only remains then to cement the porcelain teeth on to the cases prepared for the pins. These pins, it will be remembered, are bent to ring form.

Only in cases of faulty articulation will a porcelain tooth break off, and even then the pins will remain firmly imbedded in the cement. If the porcelain breaks, pins and cement are removed with a drill, and the porcelain tooth is replaced in the manner described.

The advantages of this method may be summed up as follows: The porcelain tooth rarely breaks, and if broken, can easily be replaced. Repairs can be made in a very short time. This method can also be applied to a lower bridge for anterior teeth and canines. For pivot teeth, this method is favorably indicated.—*The Dental Surgeon.*

THE FINGER NAILS OF THE DENTIST.

BY L. JOLY.

(*Journal Odontologique de France*, Paris, Dec., 1908.)

Is there anything more repugnant for a patient than to be treated by a dentist with neglected hands? It is also, on the other hand, very unpleasant for the dentist to treat and touch an unclean patient with a filthy mouth.

If there is abrasion of the skin on his hands or fingers, there is danger for contamination, and blood poisoning may be the result.

The fingernail is the most difficult part of the hand to keep clean. Who can certify that germs have not been left under the nails after the hands have been washed? It is therefore of great importance that the fingernails should be thoroughly cleansed with a nail-brush after the hands have been well washed with hot water.

The following preparation may be used to great advantage in the manner described below:

Pulverized Venetian talc.....	6 parts
Barbers' pulverized soapstone.....	4 parts
Carmin	Q. S.
Mix with care.	

After the hands have been well washed the finger tips are plunged in a box containing this mixture, and they are wiped off with a fine chamois skin or with a soft brush. After an operation this brushing with the washing of the hands will insure cleanliness of the fingernails.

This powder will be found valuable, especially for dentists who do laboratory work. It is inexpensive and may be prepared by the dentist for his own use.



ORIGINAL CONTRIBUTIONS

TOOTHSOME TOPICS.

BY R. B. TULLER.

I 'spose my pa is the best dentist there is.

He sez of cours ther is some dentists what won't admit it, but it is jest jellysy.

Pa is wot he calls himself, expurt, an' he can do things wot the other fellers can't do—not very well.

If pa don't kno enny way to fix sertin things he jest sets to an' goes at it jest the same as if he did kno.

Then, too, pa is a reglar injeenus an' he invents ways fer the other fellers to profit by, an' he has help a lot of 'em, by doin' for 'em sum wuk they can't do. Of cours they purtend they haint got the time.

There's a feller not far frum us who has a hull string of letters behind his name, an' he can't make the cheepist kind of a rubber plate there is.

But he don't let on to the peepul but what hee's the hull thing. He talks as if he knowed it all, an' he bunks 'em out of twiste as much as pa gits fer his plates, an' then gits pa to make 'em for him. He knows they ain't no one can beet pa on rubber plates; but his pashunts don't know that.

Course pa wants to keep on good turms with him, an' he can do them plates tween 'pointments, an' make more munny. I've seen him work in some times 8 or ten bee tween apointments.

Yes, sur, you bet pa is a expurt. Why, a wumen come in the other day an' ast pa if he could fill teeth with dimints. I thot pa would be up agin it; but he waz there wit the goods—or knowed wher to git 'em.

Pa said, "Oh, to be shure; I'm jest the man. That's my spesh-ulty. Who sent you to me, may I ast?" She sed no one had; she just seen the sine an' thought she'd enquire.

Pa sed, "It's ruther strange, but you got into the right place all O. K. I 'spuze, madum, I've set more diments in teeth than enny other living man. But you understand, madum, it is expurt work an', of course, that meens expurt prices."

The wumen sed, "Oh, shure; that's all rite. I expects to pay well fer it, an' dimens cost munny. If not to much trouble I wood like to look at your sortment of diments."

I thot pa wuz stuck here, but he sed, "Oh, I don't keep 'em here. It ain't safe. They ar down in my safety valt drawer." Then he sed, "I'm a little afraid my sortment is low, becaws I've set so menny lately. I'll tel you; I think the best thing fer you to do is to meet me tomorrer at the dealers, an' then you can look at a very large a-sortment."

She thot that was the best way, too, an so a time wuz fixt. Then pa he skidood down there to fix things wit the deeler so heed hav a proffit fer his own self.

Well, she met him an' pict out the stones, an' pa lookt fer her to pay; but when she lookt fer her pocketbook, she'd left it home.

Then pa had a little side talk with Mr. Levi an' it was arranged that pa cood take the diments by morgaging his office on eezy payments, an' so pa came away with four stones worth 'bout 13 dollars (\$\$) and 99 cents a piece.

Jest how he wuz goin' to set 'em he didn't know, but 'he cood think it out 'fore the time. Ma sed, "Git yer munny in advance, Joel, fore you do enny wurk," an' pa sed he gest he wuz on to hiz job.

But nex day when the time cum Mrs. Whatshername did n't show up, but Mr. Levi did, an he wuz bilin'. He sed the wuman had took a handful of dimonts an' left some paist ones in their place, an' he wanted to find her. Pa did n't know who or what she wuz, or where she lived. Mr. Levi sed he'd hold pa then, an' wanted a mortgage on the hull place; er else the spot cash only 38.00 \$\$.

When pa sed he woodent stand fer it Mr. Levi sed he gesst pa wuz in curhoots. Pa he flew mad an tole him to skidoo, he did n't bleeve he lost no diments, but wuz tryin' to bunk him, an' pa wanted him to give up the morgage un' take back the 4 stones; but Mr. Levi sed he wood not only keep the papers, but he'd have the law on pa; so now we are up against a lawsoot, an' ma sez mebbe prisn.

Ma, she sed to pa, "Say, Joel, talkin' about bein' expirt, you ar a expirt eezy mark."

Well, to smooth ma out pa hatto give her the diments what the man wooden't take back, an' he poo pooed what Levi cood do in a lawsuite.

Well, ma had wanted some diments perty bad, an' she took 'em an' went over to see what it wood cost to get 'em set up in a ring.

The julery man sed, after lookin' at 'em an' puttin' some alkyhol on 'em, "Mrs. Bunkhum, I don't bleeve I'd spend much munny havin' them mounted; they ar jest paste. Where in the world did you git 'em?"

Ma didn't say. She jest brot 'em home an' sed to pa, "Joel, when we have chicken dinner do you know what you allus say to me when you serve me the wing? 'Every part strengthens a part.' You want me to be angelick. I am or I'd swear now. On the same ground, when you git a nuff more of these paist things I'm going to make you sum nice noodul supe. Every part, etc."

Then pa wuz wild an' sed heed find that woomun—that thief—if it took all winter. "I thot," he sed, "that the one's she pict out fer me waz genuine, but by gosh I've been stung *bad*."

Ma suggested that he wuz so expurt he mite turn expirt detective an' see if he cood find the Bee. In the meen time he mite do sum expurt silver fillings fer awhile to take care of that eezy paymint morgage, an' she'd wear the same close'fer another year.

Gosh!

DENTAL DISORDERS CONTRIBUTORY TO TUBERCULOSIS.

BY DR. B. J. CIGRAND.*

UNDER THE AUSPICES OF THE CHICAGO MEDICAL SOCIETY.

The last few years have brought to our attention the enormous death rate charged up to tuberculosis. It is estimated that 150,000 people annually die in America from tuberculosis, and upwards of one billion dollars are expended and lost because of this illness. The fact that this disease attacks those who are in middle life interests us all the more because it is taking from our midst the very fiber of our commercial and educational system. The great army of people in-

*Read at the Chicago Public Library, Nov. 14, 1908.

fected from tuberculosis range between the ages of 15 and 35. While the origin and aggravating causes are subjects of real dispute, it is nevertheless conceded that certain predisposed conditions produce symptoms which are universally indicative of tuberculosis; while the conditions of the mouth have escaped the critical attention of the medical scientist, it is nevertheless deserving consideration, in that many ailments we have, physical and mental, trace their origin to disorders of the teeth. We have and are this day and generation giving too little attention to proper manducation and mastication and observation should teach us that the primary requisite of good health



Symbolic of Tuberculosis.

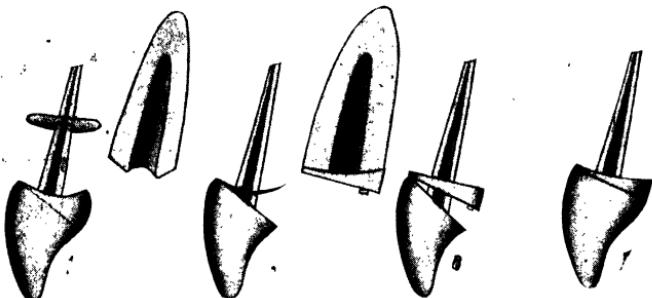


Alveolar Consumption.

is a properly organized and hygienic masticatory apparatus. In this connection the function of saliva must not be underestimated. Our hasty meals and hurried manner of eating, bring about circumstances that may be the initial cause of tubercular progress. The saliva is an essential intermedium to proper digestion, and if the latter is impaired there can certainly not be normal assimilation unless our foods are thoroughly insalivated while in the mouth; the further preparation of our edibles for the important transformation into blood has been impaired; this interference must of necessity beget impoverished circulation.

Nature requires that the food shall be crushed and pulverized

by the teeth and softened and chemically changed and prepared by the saliva, and when these two processes are accomplished the food is ready for the stomach. The present prepared foods do not beget jaw action, hence, I contend, do not receive the proper amount of parotid saliva, and the foods lacking this pre-stomachic treatment must of necessity lack in the blood-producing elements. The mischief of this poorly prepared morsel may be one of the prevailing ailments of dyspeptics, and may also be conducive to the ravaging increase of consumption. Tuberculosis makes great headway in any system that is exhausted; in any person whose vitality is low; in any individual whose energy is lessened through impoverished blood. The action of the jaw being omitted, the flow of the parotid saliva is scant, the food morsel improperly prepared, digestion disturbed, the blood impoverished, and with the organic and systemic energy low, tuberculosis, pyemia and all consuming diseases readily progress.



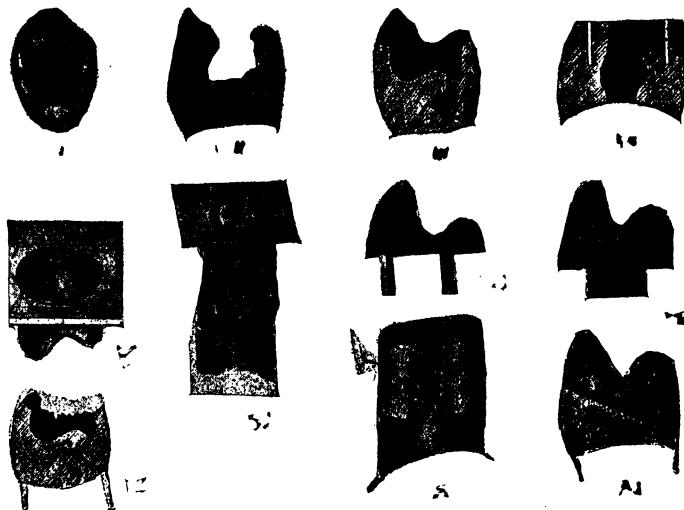
Perfect Fitting Bandless Crowns.

All this destruction of human life has been aided, not induced, by disregard of the cardinal principle of digestion, by our present methods of hasty eating, giving neither thought nor time to the process of manducation and mastication—the human or civilized species disregarding nature's greatest and most divine requirement—digestion.

The most astonishing feature relative to the causes of tuberculosis lies in abnormal conditions of the mouth; the large cavities filled with indescribable debris certainly tend to disarrange the entire digestive system. The conditions of these cavities when carefully examined under a microscope give evidence of a most prolific micro-organic life. These cavities hidden away from the access of a tooth brush are splendid harbors for generating tubercular life. No

where in the entire human economy could you find a more congenial habitation for the germs of tuberculosis than in the deep seated cavities of teeth, while they possess the three requisites to give assurance to their reproduction, namely, heat, moisture and oxygen.

Another element in a deranged mouth which adds to the likelihood of consumptive possibilities is the ulcerated tooth, belching forth pathogenic fluid called pus. This virulent matter seeping from the gum finds its way to the stomach easily, while its presence so unwelcome to the gastric glands prevents a proper gastric bath to the foods which lie within the walls of the stomach. Nor is the presence



Saving Inter-Dental Space.

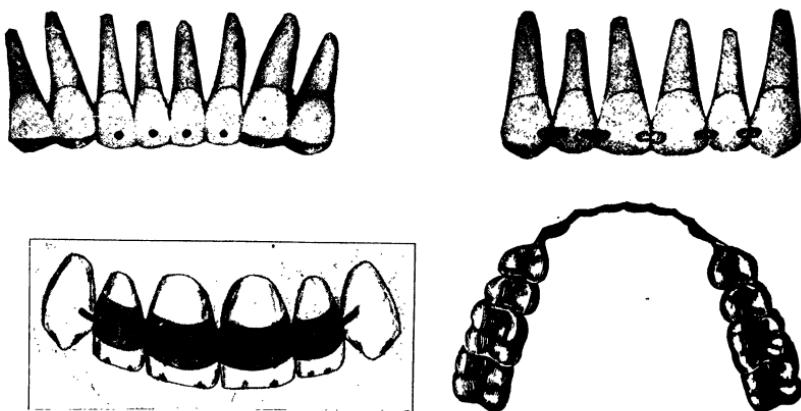
of the pus limited to the stomach alone, but follows the entire alimentary tract, endangering the whole system and digestion and eventually bringing about poisoned conditions of the entire human fabric. Having thus undermined the circulatory system, the feeble, emaciated and degenerated being falls easy prey to the tubercular bacilli, whose attack cannot be withstood because of the lack of human vigor and cell-energy. Another important attribute of robust health demands that the mouth be in a positively sanitary condition—the so-called pyorrhea alveolaris, or the wasting away of the alveolar ridge, which contains the teeth, has in this process pus germs

which are fully as dangerous to health as the decayed and the ulcerated dental organs. There are innumerable conditions of the mouth which yield pus, as a result that in all of these dental disturbances which inaugurate this poisonous matter, must be relieved and cured of the pus which, upon being swallowed, will invite the white plague —consumption.

The bacillus of tuberculosis is present and doing mischievous work in many mouths which have had so-called dental attention. The average cement filling is a porous material with cavities large enough for a conglomerated mass of putrid vegetable and animal debris to lodge. Within this apparently well fitting cement filling there is a splendid shelter for myriads of bacilli to colonize, hence the large cement filling is not a safeguard against bacterial generation, because of this sponge-like porosity. The amalgam filling shares a like objection, but not because of its porosity but because of its general changability. The masses of amalgam shortly after hardening shrink, allowing at its circumference a wide gap between the border and the walls of the cavity. In this circular opening, clogged with the fluids of the mouth and disintegrating matter, bacilli-tuberculosis again find a happy shelter. Gutta-percha, as frequently employed by some of the practitioners, is absolutely unreliable as a means of excluding tubercular matter. My own personal tests of the cement, gutta-percha, and amalgam fillings lead me to the belief that the gold leaf filling, the porcelain and gold inlay are the only fillings giving promise of tubercular exclusion; and though the inlay fillings are held in position by a thin film of cement, it nevertheless does not possess bulk and hence must necessarily be more assuring in its sealing properties.

The barbaric fashion of prodding the teeth with cheap wooden toothpicks, from whose sides bristle forth infinitesimal splinters, inauguates inflammation of the gums, besides causing openings between the teeth which should be tightly filled with gum tissue. The gums are filled with broken bits of wooden slivers, and the opening created becomes filled with decay as disintegrating masses of food-stuff, and in this convenient habitation we have again erected a temple to the Goddess of Tuberculosis. Last and far from least is the part the practitioner plays in spreading this dreadful life-destroying disease. The ethical practitioners of dentistry are constantly taught

at the Society of Communion the essential and all important subject of hand and instrument sanitation. The reckless dentist, who is disregarding the cleanliness of his digits and who is unmindful of the disinfection of instruments is a menace to the community. I could imagine no more certain way of spreading the disease of tuberculosis except by advocating indifference of finger and instrument cleanliness. It would almost seem to me within the province of the department of health to examine into the practice of all dentists, and where the investigation positively demonstrated the disregard for cleanliness of hand and instrument, a temporary revocation of his license might remind him of the teachings he received while at college

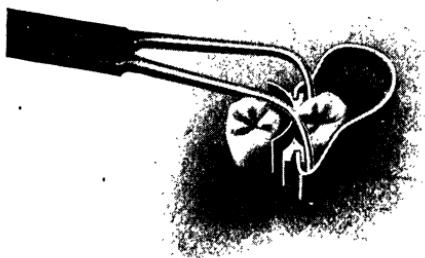


Rescuing Alveolaris.

pertaining to the subject of "office hygiene." This rigid enforcement of compelling practitioners to disinfect their hands and dental instruments would not only be a safeguard against the spread of tuberculosis especially, but would be the means of preventing contagion of many other ravaging human disorders.

In dentistry, the supposedly simplest of all operations, namely, that of cleaning the teeth, is often productive of serious and injurious results, and not infrequently a patient presents a single tooth possessing pyorrhreal pockets. The thoughtless and careless operator, dipping excavators in these pockets, proceeds to the adjoining healthy teeth. In less than 90 days he has, by this reckless attention, inoculated the

entire gums with pathogenic life whose ravenous appetite for human tissues is beyond the description of any scientist. The proper cleaning or purging of the teeth is essentially one of the most delicate and painstaking procedures in the art and science of dentistry. Peculiarly enough, there is a strange coincidence between the raging of tuberculosis and the raging of dental decay; both diseases or ailments have periods of cessation; at times, hence, the human body seems immune to every attack. Both of these agencies flourish pre-eminently between the ages of 15 and 35. Dental decay in the major number of cases practically disappears, as does tuberculosis, as age creeps in. Hence the importance of looking into the welfare of those who are entering the prime of life. This nation, quite contrary to the estimation of President Roosevelt, is not suffering from a lack of birthdays



Inlays Save Teeth.

so much as it is from a lack of celebrating birth anniversaries. We have a great birth rate in the United States, but coupled with it is an overwhelming death rate of child and juvenile. Save the children that are born and we need have no fear for the depopulation of the land. Let the central government at Washington, the governments at state capitols and municipal governments spend one-half as much money on prevention as they now expend on the cure and our country as a whole will have attained a physical perfection which will resound to the endurance of the Republic.

[Dr. Cigrand first brought these points out at the National Dental Association in 1904.—EDITOR.]

AN OPEN LETTER TO DR. O. W. HUFF, HOT SPRINGS, ARK.

I have read what you wrote as published in the AMERICAN DENTAL JOURNAL for December, under the heading of "Thou Shalt Not Kill."

Did you quote the sixth commandment in support of the theory that dentists should never kill nerves with medicine?

We all know God referred to human life, not tooth nerves, for Christ said of the best hand and the best eye (the right) that even they should rather be plucked and cast away, than to remain as offending obstructors and pain inflictors, by reason of incurable disease, and if the hand and the eye are to be sacrificed to get rid of offense, why not "kill" a tooth nerve?

Evidently, when you wrote that article you had arsenic in your mind as the objectionable destroyer of nerves; but it makes little difference what destroys the nerve. If the nerve is removed or its removal is attempted and that root is not rendered pure and antiseptic and properly filled from apex to crown, it is a failure, and that dentist who can in all cases do that in posterior as well as in anterior teeth is far ahead of the average in the skill of our noble profession.

Then, if this is true (and no one posted will deny it), what is the logical reasoning? Why it is that we should adopt or advocate some method, any method that will prove successful in the hands of *the average dentist*. Our mission in the world is to save teeth, and that method which saves the most teeth with the least pain is the most desirable. You name "peritundo" as an aid in pressure anaesthesia. Well and good. Now let me name Nerve *Qui-e-tus* as the most wonderfully successful compound ever put in a tooth. What does it do? Why, it stops the pain, kills the nerve, and, left in the tooth three or four days, minimizes it, rendering the tooth, if properly filled, immune from the danger of soreness and abscess so commonly following every other known method. And there is a reason for it. This medicine (N. Q.) being left so long in the tooth penetrates the nerve and even the fibrille clear through—not only the dentine, but even the enamel, securing the crown against change of shade, because every fiber is thoroughly imbued with the mummifying substance of the compound. The dead nerves are usually left undisturbed in the buccal roots of upper bicuspids and molars when N. Q. is used, be-

cause of the difficulty experienced by the average dentist in successfully removing the nerves of these teeth and properly filling them.

The shade of the teeth does not change, and even if it did in the molars would matter but little, but it don't perceptibly. Certainly no more than those devitalized by pressure anaesthesia, or any other method.

Pressure anaesthesia would probably be as good as any method—probably is as good as any other method of devitalizing (for that's what it is, even though temporary). But *root filling!* Ah, there's the rub.

Some time ago—several years ago—*The Cosmos*, or some other journal of dental science, contained a contribution from some member giving an account of the experiment by a prominent dental association, (I cannot be more specific, because I have forgotten dates, etc.) but the essential facts were as follows:

A committee was appointed to prepare something like sixty teeth by simply imbedding them (all but the crowns) in as many little blocks of plaster paris. They labeled and sent them to members of the association who volunteered, each one to fill one tooth, in his own way, and return it to the committee for examination, the committee to report results at a future meeting of the association, the names of the operators to be kept secret as to any particular case. The results were a revelation! The committee carefully ground each tooth or filed it down about half through the chamber and root canals, carefully preserving the work of the operator, and they not only took their work to the next meeting of the association, but had the ground teeth photographed, and these photo-engravings were published with the account I read. The committee decided and reported that, I think, only eight of the sixty were properly filled—so as to have probably rendered the tooth immune from trouble. Some had let the drill or instruments pass through the foramen. Some had broken off their instruments in the roots. Some had filled only half the roots, *i. e.*, only half way to apex. Some of the fillings were porous and much of the nerve was left in some, and these dentists who had volunteered to fill these specimens were up to the average of dentists who join the associations, and they are presumed to be the best (?).

At any rate, they are as good as those who do not belong, to say the least.

Now what did that prove? There could be no better proof that the average root filling is a failure, not because of the method of devitalizing altogether, but because the average dentist cannot properly fill roots, especially those difficult to approach. I should add that those specimens included anterior teeth as well as those far back in the jaw. This explains why so many so-called dead or devitalized teeth, sooner or later give trouble. Not because they are devitalized, but because of the subsequent treatment and faulty filling.

We want no better proof than the foregoing that what is needed is a method of treating diseased teeth that is so simple and yet so successful that the dentist of ordinary skill, as well as he who is expert, can use it to the salvation of human teeth. The means to this end is the means desired. And I want to say seriously and without prejudice that my experience with Nerve Qui-e-tus, and I have used it over fifteen years with absolute success, is the simplest and most successful means in the hands of the average dentist ever discovered for saving diseased human teeth successfully.

You know, and so does every well informed dentist, that mummification of nerves has, by various methods, often been successful, and that, like the filled root, has often proved a failure. Why not always successful? Because not always done the same way.

By using Nerve Qui-e-tus and the method which accompanies it there is uniformly the same successful result. During over fifteen years I have employed it in, I presume, at least five thousand teeth, and I candidly believe that not over a dozen have ever been failures. Many other have had like results. MILES J. PERKINS,

Beaumont, Texas.



EDITORIAL

A WORK ON OPERATIVE DENTISTRY IN TWO VOLUMES. By G. V. Black. Published by the Medico-Dental Publishing Company of Chicago.

The great dental activity manifested during the year 1908 has probably surpassed any previous year, in the matter of better and more scientific work upon the subject of dentistry. And among the great works that have been published during the year of 1908 is the work that we have under consideration.

In reviewing this treatise on operative dentistry there is really but little to say that could be said better than to say, this is Dr. Black's work. This covers all that need be said. Dr. Black has and always will stand out as an unique figure in the profession of dentistry, because there never has been, and probably never will be, a man with so many characteristics in his general makeup that are so individual and distinct from each other. A review of this work is really a review of the life of a man who is born of simplicity itself, and through an early simple life he learned to be a keen observer of anything that attracted his attention. And upon this very foundation rests one of the most monumentally published works that the dental profession has ever had in any one given line.

The book under consideration has the great disadvantage of being too large as a text book for students' work, and we might say too unwieldy. It also has the disadvantage of being too expensive for dental students, and my opinion is that the work, like all great works, will not immediately find a place in the curriculum of dentistry. Dr. Black's keen, scientific observation and his ability to correlate scientific facts into a philosophy makes the book a fascinating work for those who might be interested in natural history or any subject pertaining to the natural sciences.

A short paragraph at the top of page three, volume one, illustrates the subject matter and its treatment better than almost any way one could treat the subject. He says in part, "It is intrinsically

wrong to treat the subject of filling teeth simply from the mechanical standpoint; it is wrong in that it tends to produce in the minds of the students the idea that filling teeth is a purely mechanical pursuit. This is far from the proper conception of the facts. In filling teeth, the closest use of our knowledge of the pathology of dental caries and of the local conditions of its occurrence and of its recurrence after fillings have been made should be put to the full use in every case, in order that the greatest benefits may be derived from filling operations. To state this in the fullest detail has been a special object." The quotation here presented illustrates what a broad understanding the author has placed upon the scientific understanding of dental pathology; this must necessarily mean the understanding of a lot of things outside and beyond the mere fact of knowing something of theoretical and practical operations in the mouth.

This work is the outcome of a lifetime in the study of the principles of chemistry, physics, mechanics, and their application to general biological principles. Dr. Black in this work has not left much for the imagination. There are no lines to read between; it is a component, of well arranged, well studied facts pertaining to operative dentistry. The illustrations is a great work within itself. If one would only take and study closely the illustrations he would be able to make out a great deal about dentistry and the methods in which the author advocates operative procedures.

As we have just stated, the book is so full of valuable material and especially the application of purely scientific mechanical and biological principles in the preservation of the teeth, that it leaves nothing for one to criticise. There has been much said against Dr. Black's principles of extension for prevention, and it is easy to see by the literature and all that has been said upon that subject that the principle laid down by him of extension for prevention has never in one instance been disturbed; but the great fault lies in the application of the principle and not in the principle itself. Those of us who have followed Dr. Black's work are so familiar with the simplicity of his philosophy, that we may in the future take too much for granted and say that the subject has been completed. When we say that any one man has given us all that has been said upon any particular given subject we cease to progress. We can plainly see in this work that the author has not attempted to make a lot of dogmatic

statements and expects any one to believe that that is all there is to be said upon the subject. He has laid before the profession of dentistry principles, and the application of those principles, in a clear and concise manner. He has not made a statement of a principle that he has not fully backed up with a philosophy that is so sound and so logical that it would seem on first sight, or even after a long continued study and research, that there is nothing else to be said upon the subject.

There is but one feature of the book in which I feel myself inclined to regret; that is that we have no more upon one subject than we have, and that is on the subject of dental caries. If I were going to criticise any part of the book, this would be the part that I would find myself criticising, and yet for the next hundred years we may not have the question any more settled than we have now. In a work of this like Dr. Black's, it certainly would have been interesting if the author had given a more extended history of the subject of dental caries. There are but few in the dental profession who are at all familiar with the various theories and conceptions held in former times regarding dental caries. Dr. Black dismisses the subject by stating, "More or less vague writings of caries of the teeth are formed in ancient literature, most of which are too uncertain in their meaning for us to gain any clean conception of the views held of its cause." There are some very interesting theories with reference to dental caries, even as interesting as those quoted by Dr. Black. The worm theory, for instance, was advanced in 1114 and to-day is the theory in China. The question of removing the worms from the teeth when a patient suffers from toothache is juggled with as great skill as some of our modern empirical quacks. We might also add the unethical treatment of their patients. They have some small worms in the handle of a hollow instrument, and when they clean out a tooth they display the worms which they have removed from the gums and surrounding tissues and inform the patient that he is cured. Doesn't that sound very much like some of our pyorrhea specialists? While all of these theories of dental caries really are no more than historical accounts of this disease process, they would be the source of a great deal of pleasure and profit and would fix our modern ideas of the disease process more clearly to the student. The chemical theory of decay of teeth is interesting, and also the inflammatory

theory bears very close relation with the development and scientific work of our more modern time theories.

It perhaps makes but little difference what I might say upon this subject, but I am not convinced that lactic acid fermentation is the only true and exciting cause of dental caries. If one reads with a clear scientific understanding the physio-chemical phenomena that manifests itself in the disintegration of the enamel of teeth, who can say with absolute certainty that lactic acid is the true and only cause of the disintegration of the enamel? But that question has nothing specially to do with the subject under discussion. I still maintain that the profession of dentistry would have been better served if we could have had more of the history of the development of the subjects under discussion. From a historical point of view Dr. Black is the only man who could have developed the history of dentistry as applied to caries and their treatment in this work and under the circumstances herein set forth.

The illustrations in this great work is one of the great crowning features of the true understanding. There is volume after volume in these illustrations, and no man can practice dentistry intelligently and with a pride and understanding of its true meaning without having these volumes in his library. The more one sees, studies and reviews the printed pages and illustrations, the more one realizes the greatness of its scope and benefit.

Now if I have in any way shown in my remarks a lack of appreciation of this great work and its author I have done so unintentionally. But one thing that I wish to emphasize above all is that this isn't a work to be read, it is a work to be studied. I have spent several evenings and odd moments reviewing the illustrations, and I think it would probably take months and probably years to study out each particular illustration, until one had become thoroughly familiar with all of the eight or nine hundred that are in the book. If there is any work that has been published for many years that deserves the highest commendation it is this work. The young men cannot afford to neglect the study of this great work. It matters but little what time or money this work has cost its author; he has been repaid already, for he is the man who has received the greatest good, and all that he has received in the building of this great monument is far greater in proportion than the compensation in the way of money or anything else in worldly goods.

ABSTRACTS AND SELECTIONS.

A PRELIMINARY REPORT ON THE USE OF A NEW ANTI-SEPTIC POWDER IN THE TREATMENT OF PYORRHEAL POCKETS.

In the treatment of pyorrhreal pockets it is difficult to retain a liquid antiseptic in the spaces for any length of time, and thus a frequent application of the antiseptic is necessary. It has therefore been my endeavor to obtain an efficient antiseptic powder that would remain *in situ* and produce a continuous beneficial effect upon the diseased area. My experience demonstrates that methylene-disalicylic-acid-iodid (formidin) fulfils these requirements most perfectly. Its chemical formula is $C_{15}H_{10}O_6I_2$, and it is a compound derived from iodin, formic aldehyd, and salicylic acid. In the presence of alkaline secretions it decomposes, producing the characteristic reactions of its constituent parts. As formidin is tasteless and has a slight, rather pleasant odor, and as it is devoid of toxic effects, it can be employed with perfect safety, and without any disagreeable symptoms ensuing.

I must admit that the number of cases in which I have employed this powder is not sufficient to absolutely demonstrate its value, but my results so far have been so specific that I here report one of my cases in detail, hoping that I may hear of others who have employed similar methods of treating this important disease:

Case. L. B. M., female, age forty. Before this case came to me for treatment an upper second molar had been lost, and at the time of examination three remaining second molars and one third molar were very loose. These presented prominent open pockets with much irritation and soreness. A large amount of tartar was present and considerable absorption of the alveolar process had taken place. My treatment consisted of scaling the teeth to remove the tartar and thoroughly cleansing the pockets with hydrogen dioxid. Thereupon, after drying the site and taking care to keep away moisture by means of napkins, I proceeded to pack the pockets with formidin. The packing was accomplished by means of a modified amalgam syringe carrier. The home treatment consisted of massage, of painting the

gums with tincture of iodin, and of rinsing the mouth with alkaline and astringent washes. For constitutional effects the patient received alteratives and tonics and her diet was carefully restricted. During the more acute stages the pockets were cleansed and packed, as described above, this treatment lasting four weeks with three visits each week. After this period the formidin was sealed in by means of a suitable retainer, and was changed, at first every week, and finally every two weeks, until cured.

The results of this treatment were eminently satisfactory both to the patient and to myself, and as formidin can be tolerated by the most sensitive patient without too frequent applications and without any disagreeable effects, I believe it to be one of the most efficient methods at our disposal for overcoming this condition.—H. Otis Logue, D. D. S., *Dental Cosmos*.

CARE OF THE TEETH OF INSANE PATIENTS.

BY DR. GEORGE A. MILLS.

DENTIST AT THE EASTERN ILLINOIS HOSPITAL.

In my judgment one of the wisest policies of the Illinois State Board of Charities is found in the recommendation that dentists be regularly employed on the staffs of the state hospitals. To one who has not seen the mouths of the patients the need of such service might not be apparent. I have found, at Kankakee, and I presume dentists installed at other state institutions have found teeth that for many years apparently have had no care and, in many cases, teeth that apparently had had no care before the patients came to the institution. I have seen old roots with decomposed food in and around them, with inflamed and congested gums and with pus constantly discharging from around them or from fistulous openings somewhere on the gums. I have seen teeth that, it would seem, have never been cleaned, and with a mass of foul collections clinging to them, some of which at the next meal will be carried into the stomach. I have seen many teeth badly decayed or aching and many with the deposits around the gums commonly called tartar or "scurvy," causing loss of teeth by the absorption of gum tissue or of the bony structure. All

of these conditions are found, and usually in their worst form, and the breath of their owners fairly loads the air with foul odors.

Friends would sometimes ask that the patients be taken over to town to have the needed attention given their teeth. This in many ways was unsatisfactory, as only a small per cent received the needed attention. But what was being done in most cases? All that could be done without the aid of a dentist. Dr. Green, here at Kankakee, was furnishing tooth brushes and insisting that they be used. Every toothache was given the best attention possible under the circumstances, but that usually meant the forceps and, very often, a broken tooth or root.

I may say that in one ward of twenty-three patients examined I found three whose dental condition was as it should be. In many wards that proportion would be less.

Often when a patient is brought to me who has been suffering I ask the attendant: "What would have been done with the case before the institution had a dentist?" The only reply is, invariably the same: "Try to get some medicine into it, and, if it still ached, take the patient to the infirmary and extract the tooth." If it stopped paining, nothing was done, and so the tooth remained with a large cavity, a catch-all for the food to cause further decay, until, eventually, the tooth became a straggling root, which usually abscessed, thereby causing much pain and swelling and finally bringing the forceps into use.

POLICY FOLLOWED AT KANKAKEE.

The policy we have been following can briefly be outlined. We take and examine every case in a ward, that it is possible to examine, making note of conditions and work needed; removing those teeth and roots that are useless and beyond repair, as best we can, cleaning the teeth and removing deposits from the gums.

In the bonded cases, an estimate is sent the friends of the patients, giving the work needed and the cost, the charges being made small, about a half or a third of the charges of a regular practitioner. The county cases we treat and do such work as we can by using cements and amalgam. This cost is charged to the county at actual cost of the work.

It is impossible to give the whole amount of work done, as at first no regular account was kept. At this time, October 26, 1908, I

have gone over twelve wards, besides having patients coming from other wards at all times. I have seen in all some 900 to 1,000.

The figures for the months of June, July, August and September are as follows:

	June.	July.	August.	September.	Total.
Plates	4	..	2	6	12
Gold fillings	5	5	5	1	16
Gold crowns	6	5	..	2	13
Cement fillings	3	2	2	..	7
Silver fillings	30	60	71	34	195
Treatments	47	41	26	19	133
Extracted	90	40	206	432	768
Cleaned	9	17	6	32
Roots filled	15	15	12	42

For the month of June I did not keep a record of the teeth cleaned or of the number of roots filled.

As our patients find out we are giving them dental care many of them ask to be brought to the office.

We have lately begun examining the teeth of the newly admitted cases, thereby being able to get at the needed work in the earliest stages.

When a patient's friends find that the institution has a dentist they often bring the patient to me or come in and ask me to see the patient and tell them what is needed.

A few days after I arrived here I was standing in the main hallway when an elderly woman walked up to me and asked me if I was a doctor. I told her I was a dentist. She wanted to know how long the institution had had a dentist. I replied only a few days.

"Well," she said, "I am glad. I have four boys here. One day I was visiting the oldest and I saw that most of his teeth were gone. I said: 'Charley, what has happened to your teeth?' He told me that they had been hurting so they had been taken out, one by one." This woman told me that her son's teeth were good at the time he was admitted, and that she would have been glad to have saved them, if she had known they were in need of care. Today they would have been saved, as Dr. Greene repeatedly tells me: "Fill every tooth that can be filled, even if it will last only a short time, as it is too valuable to lose until it is absolutely beyond saving."

I often have a patient say: "You can't do my teeth any good now, as they are too far gone. If they had been looked after when I first came here, they could have been saved, but it is too late now."

I usually find that to be true. It is too late for many, but not too late for more, and for the newly admitted ones.—*Quarterly Bulletin, Illinois Board of Charities.*

ORAL SEPSIS AND ITS RELATION TO ABNORMAL DISEASE.*

BY JOHN H. DAUBER, M. A., M. B., B. CH. OXON.

Not infrequently it happens that the obvious is overlooked. To stumble over some obstacle in our path while scanning the horizon is no uncommon mistake, and so it sometimes falls out that while looking far afield for the causation of some obscure abdominal symptom, we fail to take cognizance of important factors lying literally under our very noses.

Since my connection with the out-patient department of this hospital my attention has been called again and again, by constantly recurring coincidences, to the great influence exercised over the entire organism by the condition of the buccal cavity. Much has been written and said on the subject of oral sepsis recently, and the address of Mr. William Hern to the students of the Middlesex Hospital a few years ago is, amongst several monographs which have more lately appeared on the subject, one of conspicuous value, and worthy of being read and re-read by everyone engaged in the care and treatment of the sick. As, however, life is too full for everyone to read all that is written, a great deal of careful observation must needs be wasted, and so, in spite of constant reminders, the importance of examining the condition of the teeth, gums and fauces in the case of every patient, is not even yet sufficiently appreciated. It is only when the mouth is scrutinized in every case without exception, as a matter of routine, that it begins to dawn upon the student or practitioner that good health is a matter of sheer impossibility in many of the cases he sees, owing to the neglected state in which the mouth is kept.

A certain well-known surgeon once caused some amusement by stating that he considered it to be the duty of the public authorities to impregnate the water of the drinking fountains in London with iodide of potassium, as he considered so few of the population were

*A Clinical Lecture delivered at the Hospital on January 22.

free from the taint of syphilis. Of the prevalence of the syphilitic poison there may be some doubt, but there can be no two opinions about the universality of dental caries amongst the people. If any one should systematically look into the mouths of all the out-patients attending the London hospitals, he would be appalled by the state of affairs revealed, and would certainly form the opinion that dental hospitals should be forthwith established at every street corner to deal with the vast amount of caries that is prevalent. The present dental institutions are quite inadequate to deal with the mass of dental disease in London; dentists themselves admit it, and in my opinion there is no more urgent want at the present time in this city than institutions in superabundance where poor people should be able to get their teeth stopped, or extracted, or replaced with artificial ones, at a cost within their means. The duty of attending to and caring for the teeth should be a part of the routine instruction in all elementary schools. That it is not so we all know too well. The following is a case in point:—

A patient told me only a few days ago, when I noticed that several molars were missing, in spite of the fact that she evidently paid much attention to her teeth and personal appearance, that it was only at the age of fifteen that she began to clean her teeth, and that she had lost all the missing teeth, without exception, prior to that date. It is only reasonable to believe in this case that if, as a child, she had been taught not to allow food to remain in the interstices between the teeth, but to brush them and rinse out the mouth as she has done since, that she would now have a complete set of teeth. The state, having usurped the parents' duties, should perform them. What can be done in this direction is evidenced by the results obtained under the Factory Act in the reduction of cases of "Phossy Jaw," which are hardly now seen.

There are about fifteen new cases daily at this hospital, and on my days I have noticed that it is most rare to find any patient without one or more septic teeth. Strictly as one may attempt to limit cases coming here to those of purely gynaecological interest, yet patients are unable to diagnose their own complaints. A certain percentage attend who, either in conjunction with or apart from pelvic mischief, are suffering from conditions attributable to deficient nutrition, general septic absorption, toxæmia, or some form of inflammation or colic of one or other portion of the alimentary

canal. I will trouble you with a brief recital of a few cases to illustrate my meaning.

1.—At the present moment there is in the Sydney Ward, No. 5, a patient, a married woman, specially sent up to the hospital with a doctor's letter of recommendation. In the absence of my senior colleague I examined her, and found the pelvis normal, with the sole exception that the uterus was slightly tilted backwards but quite moveable. She complained of constant abdominal pain, from which she had suffered for many years past, together with loss of flesh. I examined her mouth, and made a note on her paper, "All teeth absent or septic." There were no teeth in the upper jaw at all, but many carious stumps. In the lower jaw a few teeth stood out here and there above the alveolus at irregular intervals, like posts; the rest of the lower jaw contained numerous septic roots. I concluded, and my opinion was confirmed by my colleague on his return, that the malnutrition and abdominal pain were due to the foul state of the portal to the nutrient canal, rather than to the trivial backward declination of the uterus, and this patient will be passed on to a dental hospital.

2.—A short time ago we had a patient in Cadogan Ward who had been an in-patient in the wards on two, if not three, previous occasions. We could find nothing really amiss in the pelvis, but as often as we sent her out her doctor advised her readmission, asserting, and truly, that his patient suffered as much from abdominal pain as ever before. We were at a loss to know what to do, the pain seemed a real thing, and exploratory laparotomy began to loom like a cloud on the horizon as a possible expedient for diagnosis and relief but at the last examination of this patient it occurred to me to look inside her mouth, and there the same state of affairs as in the previous patient revealed itself—a collection of septic teeth, ragged stumps and vacant spaces. The patient had absolutely nothing to masticate with, her food must have been swallowed in an insufficiently subdivided state for the alimentary canal to deal with; moreover, with the food, undoubtedly, septic material must have been swallowed. To make a long story short, this patient made a good recovery after her mouth was put in order and artificial teeth supplied, when no more was heard of her abdominal pains.

3.—A few months ago there was a patient in No. 1 bed, Shaftesbury Ward, who came in for removal of an ovarian cystoma. I had

quite forgotten her, but she beckoned me to her side and reminded me that three years previously she had been in my out-patient department, and I had advised her to have her teeth attended to, and for this advice she wished to thank me. Unlike most patients, who dislike unpalatable advice, she had consulted a dentist to good purpose, having carious teeth extracted and an artificial set fitted to each jaw. "Before this," she said, "for twenty years, as girl and woman, she had suffered from chronic indigestion and pains in the stomach. All that time she had been 'doctoring,' and had taken bottles and bottles of physic, but of all the doctors she had seen she could not remember one who had looked at her teeth until she came to this hospital, nor had she ever consulted a dentist until then; since her teeth had been put right she had been a new woman."

4.—A lady of my acquaintance last year was operated upon for appendicitis. The operation had to be undertaken at very short notice, the symptoms being urgent. The appendix was found to be distended with pus, but fortunately it had not ruptured. The operation was a complete success, the patient made an uninterrupted recovery, and at the end of three weeks was well enough to go for a drive. The day after this she became grievously ill, the temperature rose to 102° and 103° , several consultations were held, and one physician hazarded the conjecture that, as in previous years the patient had suffered from pulmonary phthisis, there might be a lighting-up or fresh dissemination of the old tubercular trouble. The surgeons declared that, whatever the condition, it was not attributable to any further mischief in the caecum, as the abdomen was flaccid and without tenderness. At last it occurred to some one to look at the teeth, when several were found to be carious and in a most septic condition. It was dentistry that she needed; after the septic foci had been removed from the mouth the temperature fell to normal, and recovery was complete. Here again the influence of the oral condition upon the organism was not immediately appreciated. Is it not reasonable to believe that the original appendicitis had some connection with the septic teeth from infection from swallowed septic material? To me it appears more than probable that if there had been no carious teeth in the mouth there would have been no appendix abscess. I can adduce another case in support of this contention, this time in my own practice.

5.—A few months ago I operated, in a nursing home, upon Miss

X. for chronic appendicitis. There was no actual abscess, but the appendix was much inflamed, and buried amongst coils of intestines densely adherent. A large blood cyst of the right ovary, larger than a cricket ball, was removed through the lateral opening at the same time, but this had no bearing on the case. All went well until the fourth day, when the right parotid gland inflamed, with the subsequent formation of a deep-seated abscess, which I evacuated later. The temperature rose to 103° and 104°, and the patient was profoundly ill. The abdomen was quiescent throughout, the wound healing well by first intention. Now I come to the point I wish to emphasize. In this case I had neglected before the operation to examine the teeth. To all appearance the patient had a beautiful set, the whiteness and evenness of those in front contributing in no small measure to her good looks; but I found out, to my chagrin, when the parotid abscess supervened, that there were no less than seven carious molars in this whitened sepulchre of a mouth, harboring and generating hordes of pathogenic organisms which, owing to the absence of solid food after the operation, and the consequent stagnation and diminished secretion of saliva, multiplied exceedingly, and doubtless infected directly the right parotid duct; for I think the theory of parotid abscess following laparotomy which now holds the field, is that of direct infection of the gland from the mouth by way of Stenson's duct. Although the mouth teems with various micro-organisms of different degrees of potency and malevolence, yet the streptococcus pyogenes aureus is generally found to be predominant in cases of parotid abscess. Now, here again in this case it is curious to note how appendicitis supervened upon a septic condition of the mouth. Whether the micro-organisms of the appendix, the parotid, and the teeth were identical in this case I was unable to ascertain. I would recommend anyone interested in parotitis and parotid abscess supervening upon abdominal section to refer to some back number of the *Annals of Surgery*.

I cannot help thinking that the great prevalence of appendicitis in the present day bears a very definite relationship to the equally great prevalence of carious teeth. It is reasonable to believe that the appendix, being the weakest part of the intestinal tract—for it is often compared to stagnant backwater—would be the first part to succumb to direct microbic infection from the intestinal contents;

it is, moreover, a vestigial organ, and such are very prone to be attacked.

These few cases are only some out of very many—I could quote them indefinitely. They are taken as samples.

My experience in the out-patient department of this hospital is that dyspepsia, gastritis and enteritis, when they are chronic, are closely connected with and are probably due to faulty dental conditions. If the teeth are absent, mastication cannot be performed, and so the chemistry of the digestive ferments does not get a chance. If septic, then toxæmia, chronic or acute, may supervene; if the teeth are some deficient and others septic, then both results described run concurrently, and this is the commonest state of affairs—a mixed and more complex condition. Since I have examined the teeth of my patients I have been surprised to find in how few cases good molars are approximated to good molars on both sides; if there are, for example, three good molars in the upper jaw on one side, there are none, perhaps, in the lower, and therefore they are useless. But it is better to have no teeth than septic teeth, and the edentulous are generally in a better physical condition than the possessors of septic mouths.

When I was a student we were required in case-taking to note carefully the condition of the heart and lungs, and any abnormalities of the abdominal viscera; we were directed to look at the tongue and inquire after the appetite; in some few cases we were advised to examine the fundus oculi with the ophthalmoscope; but never were we, to the best of my knowledge and belief, ever asked to examine the gums or teeth as a routine practice, and it was only in the dental department, or occasionally in the surgical out-patient department, that our attention was ever drawn to them. Now I believe much of this is altered. Many physicians insist that their clinical clerks should record in their case-books the condition of the teeth, and many surgeons refuse to operate until the teeth have been set in order.

The carious teeth should be stopped or extracted, and the tartar should be removed, before operation when practicable. A mouth-wash is a poor substitute for good dentistry, but one that we often perform have to be content with. After operation the teeth and gums should be swabbed with cotton-wool on forceps by the nurse.

the tongue should be scraped and the mouth constantly rinsed, and this attention to the mouth, is, in my opinion, one of the most important duties of a nurse after severe operations, such as laparotomy. For the first few days, when solid food is not being taken, and the mouth is dry from the absence of salivary secretion, nothing conduces more to the comfort and well-being of the patient than constant attention to the mouth.

My own out-patient experience leads me to believe that, if the mouths and teeth of the population were kept in a healthy state, we should seldom hear of gastric and duodenal ulcer, and the entire large class of dyspepsias. There would be far less malnutrition and emaciation resulting from toxæmia and the ingestion of insufficiently masticated food. Appendicitis would be far less frequent. I hold the view that the increased prevalence of appendicitis, as compared with thirty or forty years ago, is due largely to the greater frequency of dental caries in our people. Whether dental caries is the cause or the result of the physical degeneration which exists so much at the present day is uncertain; it may be both cause and effect working in a vicious circle. It would be very instructive if in every case of appendicitis a careful note of the condition of the teeth were made. If this were done systematically we might be able to arrive at some definite conclusion as to the relationship between septic teeth and appendicitis.

Many years I lived among the Gauchos in the south of the Argentine Republic—a remarkably fine race physically, and the happy possessors of magnificent teeth. These people lived almost exclusively upon a meat diet, and after every meal it was their invariable habit to remove particles of food from between their teeth with their knives. This custom, though not an æsthetic one, doubtless tended, together with their diet, to preserve their teeth and their health, for during the three years I was among them I never saw or heard of a case of appendicitis, and digestive troubles generally were practically unknown.

My experience of the Gauchos is paralleled by that of Dr. Perry, who was Government Medical Officer to the Siwash Indians, of Vancouver Island, British Columbia, for eight years. I was greatly interested when he told me that all these people possessed excellent teeth; even the aged women, who could hardly walk from senile decrepitude, had no teeth missing. Dr. Perry states that several

of these aged crones were reputed to be over 100 years old, so that it would appear that the possession of good teeth tends to longevity. He noticed amongst the Indians of Athabasca the same fact—the possession of excellent teeth. All these Indians live almost exclusively upon fish and game, just as the Gauchos of the Argentine Pampas live entirely on beef and mutton. My experience is that a flesh diet is conducive to the preservation of the teeth, and, secondarily, to health.

I have occasionally, while riding to the north of Patagonia, come across skulls, probably of Indians, in which the teeth were all sound and Dr. Perry tells me the same thing of the Indians of the Northwest, and that in certain places, old battlefields, he has seen as many as forty or fifty skeletons, lying together, of Indian warriors who had fallen in battle; that he has often examined the skulls and found the teeth perfect. There are some skulls of the Siwash Indians in the Museum of the Royal College of Surgeons which exhibit this feature very well.

I am told by Colonel Lee, of the Indian Medical Service, who has spent the greater part of his life in Southern India, of a very different condition of affairs prevailing there. There the native diet is almost entirely farinaceous, and the habit is prevalent of chewing the areca nut, which is mixed with betel leaf, with a small addition of lime and tobacco. The teeth of these people are generally in a foul condition; no attempt is made to remove the tartar, which accumulates in great abundance, and pyorrhœa alveolaris is common. The government hospitals and dispensaries are crowded with cases of chronic gastritis, chronic enteritis, a type of diarrhoea which is difficult to arrest, and febricular or continued fever of a mild character, for which no cause can be assigned, but which not infrequently terminates fatally.

Contrast the two pictures. On the one hand the hardy, meat-eating Gauchos and Indians with their perfect teeth; on the other, the feeble Madras, with septic teeth and neglected mouths, living on cereals, a constant prey to dysentery and allied diseases. It would appear that "hard" foods tend to preserve the teeth, while "soft" food disposes to dental caries and oral sepsis, which in turn may be followed by a whole train of secondary disturbances of the alimentary canal.

I trust I have said enough to emphasize the importance of this subject, which is not yet fully worked out.—*British Dental Journal*.

A METHOD OF TIPPING MOLARS AND BICUSPIDS, USING STEELE'S INTERCHANGEABLE TEETH.

BY DR. J. A. TAYLOR, ELDON, MO.

Select a facing of the proper width and shade but a little longer than the case would seem to require. Select a backing slightly longer than the facing. Grind off the incisal end of the facing back to the hole and slot so it will slip on or off the backing from either end. Place the facing on the backing and center it as near as practicable over the place in the backing where the post is soldered to it. Then saw or grind the backing off at each end flush with the facing. Swage a cusp to fit the case by any favorite method and fill the buccal cusp level full of 20 K. gold solder, bring it to a smooth flat surface on the lathe. Wax the backing to the cusp with the facing in place, and try the tooth on the case, you can move the cusp in this way and procure perfect occlusion. Note the change this makes in the joint between the facing and cusp, and slip the facing off and grind it to fit again. Be very careful to have the outside of the cusp a little larger than the facing in order that you can file the gold toward the porcelain in finishing and make a smooth joint.

Now remove the facing by sliding it off the gingival end of the backing, paint the backing thoroughly with Steele's Antiflux and invest and solder the backing to the cusp.

You now have a complete tooth with a removable facing; a solid gold completely contoured cusp, and one that fits your case exactly. It is impossible to break it except from external causes.

In case of breakage, clean away all broken porcelain and cement from around the backing cusp and post. Select a facing as before and grind end off back to the hole and slot. If possible, slide it on to the backing as before, starting the incisal end of the facing on at the gingival end of the backing. If the gums and ridge will not admit of this, then with a thin "Jo-dandy" disk, enlarge the slot until it will be the width of the diameter of the post or slightly wider. Press the facing on with a good cement and hold to place for a few minutes. There being absolutely no strain on the porcelain the cement will hold it.

I am of the opinion that if this method is once tried, it will be adopted. I think there is nothing equal to Steele's teeth for cen-

trals, laterals and cuspids, and with this method of tipping the bicuspids and molars, we have almost reached perfection.—*Era.*

EVOLUTION.

BY DR. JOHN CAMPBELL, ST. LOUIS.

We are conscious of many facts touching the operation of natural forces that to us with our limited knowledge are inexplicable. We know we exist, or as Di Carte puts it: *cogito, ergo sum*—“I think, therefore I am”; but this of itself is not quite satisfactory to the mind that is inquiring from whence it came and what is the order of its being and whither is it tending. To fathom the chain of conditions that lead to being and follow out its divergencies is what the physicist attempts to do after the fashion of a limited intelligence seeking for light.

The phrase evolution means to evolve, to bring out of, to unfold, to expand. It might be characterized as a new birth. Couvier defines it as “a succession of individuals which reproduces and perpetuates itself.” Herbert Spencer says “Evolution implies insensible modifications and gradual transitions which render definitions difficult—which make it impossible to separate absolutely the phases or origination from one another.”

In searching for the underlying principle of evolution I would place it in Nature’s tendency to diversity or expansion. The forces of Nature seem to be directed towards giving birth to the largest possible number of entities, each one differing from its fellows. These forces move in a given channel for a time and then insensibly turn aside to give expression to some other phase of organic life. Thus we find man differentiated as to color—some black, others brown, some white and others of an intermediate variety. As to form, the flat nose, thick lips, high cheek bones, short of stature, flat-footed, projecting heel and other physical differences. When we reach the lower organisms of animal life the diversity is beyond computation.

The vegetable kingdom is equally diversified. So also with the mineral world.

Man is thus placed on a pinnacle, as it were, in a cloud of dust, the center of a vast moving throng of entities, and to a limited extent, estimate the forces of nature and interrogate her secret move-

ments and purposes. Man himself is a microcosm, one of nature's mysteries and was evolved out of a combination of forces, that seem to have been turned aside to give expression to another and higher and more complex phase of life, and connect the inert with the active, instinct with reason, reason with judgment and the power of drawing moral distinction.

It has been a very old belief, dating back to the dawn of history, that metals could be so treated that out of the base order could be evolved those of the finest quality, such as silver, gold, platinum and the like. This would involve the theory that the lowest substratum of metals contained in some minute form the elements of the higher order. If we apply this reasoning to organic life, whether animal or vegetable, we must conclude that those in the ascending scale have been evolved out of those in the lower strata, and that this evolving one from the other will go on indefinitely.

Are we then to have a higher grade than man? Will the forces that brought man into being combine and evolve a race of greater capacity, more perfect in outline, with greater strength of intellect, and nearer perfection in mind, body and soul than we now find him? If we reason from analogy we are certainly justified in reaching such a conclusion.

In vegetable life horticulturists have so improved on the original stock of some plants, by subjugating them to favorable conditions and treatment, that the species all but takes on a new form. Take for example the rose called the American Beauty, which was evolved out of the common wild rose, and we see this statement verified. Here we have a flower that excels all others of its kind in the richness of its color, delicacy of its odor and beauty of its form which in its native state had practically nothing to recommend it. It is here transformed into one of the most acceptable of its kind and which we might almost characterize as a new birth.

To whatever field our investigations turn we are confronted by the evidence of evolution, of the universal march towards a more perfect unfoldment of nature's laws. The cry seems to be: "Give me a chance. Furnish me with the best conditions obtainable. Let my environment be adapted to my nature. Let me draw from the great storehouse of natural forces and witness the result."

"The process of integration which every plant displays during its life we find reason to think has gone on during the life of the

vegetable kingdom as a whole. Protoplasm into cells, cells into folia, folia into axes, axes into branched combination—such in brief are the stages passed through by every shrub; and such appears to have been the stages through which plants of successively higher kinds have been evolved from those of a lower order.”—*Era*.

THE IMAGINATION AS A FACTOR IN THE SALE OF PROFESSIONAL SERVICES.

BY E. J. PERRY, CHICAGO, ILL.

It is not my intention to cover facts with rhetorical decoration of any sort. I am speaking for my profession. At the same time I am speaking out of the depths of my own consciousness. I say to you that the dentist or other professional man who depends upon the imagination as a factor of any considerable potency in the sale of his services is fundamentally wrong. The science of business, let me say, should be a study in the sale of his services. Upon what is true business science based? Answer. In the final analysis, business science rests upon an honest consideration of the consequence to both seller and buyer. The salesman that does not take into account the buyer's interest, but instead depends upon his personality and has solely his own immediate aggrandizement in mind not only injures or destroys his own business, but he injures or destroys himself. At a meeting of the National Association of Dental Salesmen in July, 1907, Mr. Frank Hancock of this city, speaking for the dental salesman, made the following statement: “The problem that the dental salesman faces is the making of more money in less time, with a greater degree of satisfaction to the customer. The problem which the dentist faces is the making of more money in less time, with a greater degree of satisfaction to his patient.” This statement is at once profound and fundamental. Speaking to the question, how can the dentist make more money and at the same time give greater satisfaction to his patients? Shall the dentist advertise? Can he get larger fees, and will either of these give greater satisfaction to his patients? Briefly answered, no. Neither of these will both enrich the dentist and better serve the patient. The dentist can get larger fees and thus make more money by deserving larger fees, and if he deserves larger fees, he will benefit his patients proportionately.

Touching the question, can the dentist advertise with profit to both himself and patient? It will be seen at once that he cannot. If the professional man shall advertise his business, he will as surely ruin himself and bring discredit on his profession, for the following reasons: He can only advertise one of two things, either that he can do things in a way unknown to others or unknown to science, or that he will do it for nothing, or cheaper than other dentists. In the first instance he lies. An unmixed, unadulterated tissue of falsehoods, and the newspaper which carries his advertisement is certainly a party to the lie. In the second instance, if he does the work cheaper he destroys his profession, and the public loses confidence in the professional skill of the dentist. The professional man who bases success on either of the foregoing ideas fails, and deserves to fail. No man can base success upon such an hypothesis. Whether he defines success as making money or as benefiting the public, from a business point of view or from a professional standpoint, the dentist cannot achieve anything but loss to himself and his profession by advertising. Quackery has many forms, but this one of advertising under the banner of business is the most destructive. The second proposition, can he get larger fees? He may for a time get larger fees without deserving them by using the arts of the confidence man. If a man shall dress peculiarly or unlike other men for the purpose of impressing his patients, he to that extent is a pretender. If a man shall seek to mystify his patients, if he shall affect the eccentricities of genius or use the imagination, if he in any way seeks to impress his patients by magnetic or mesmeric influences, to that extent he is a quack, no matter who he is or what his professional accomplishments are. The man of science is a modest man. The man of skill has no time to impress any one. Then, the only way to make more money and at the same time be of greater service to your patients is to elevate the standard of your service to your patients and thus deserve larger fees. Thus you help everyone by enlarging his view of professional skill of the dentist. Whatever elevates the standard of your profession benefits the world, and as it benefits the world it also benefits you. If a man has a high and noble purpose in the practice of his profession, it reacts upon his patients and they will prefer him. The patient has nothing to go by but the character of the dentist. The public has learned how to judge you and you must make good by the things you do and what you really are. Getting fees or selling

professional services is an ethical problem and an exact science. Practice building is as much of a science as practice itself. Practice building is also character building. If a man cannot conduct his business in a way that will build up and elevate his own character he had better change his business. A recent writer says: "All progress, whether in the realm of business, in physical development or in mental or moral or spiritual growth, is based upon law." What is this law? It cannot rest in selfishness, nor in the use of the imagination. A man is not a success because he makes money. This is but one evidence of his success. The most important question before God or man is, what has he given the world for what it has given him? Has he simply got some other man's share? If he has not rendered to the world that which is justly due the world, he has failed of success in the most important particular. The dentist who succeeds in collecting large fees and who at the same time does not render a service proportionately beneficial must use some of the forms of quackery. He must use a personality or an art of some sort in the place of skill and science. An artificial denture may truly be worth \$500, but to be worth this sum it must represent a high creative art and skill. If a dentist shall charge such a fee and receive it and the denture does not represent this high creative art, then the dentist to do such a thing must use the arts of quackery in some of its many forms. He must be skillful in the use of the imagination in the sale of his services. Give the professional man leeway to use the arts of imagery and imagination and you open the floodgates to all kinds of imagination up to absolute mystification of the patient. I say, the sale of professional services is a science; an exact science; an applied science. Lost confidence on the part of the public and a lowering of the standard of professional skill is the reflection seen in the mirror of success where success is only the getting of money. The sum total of this great loss to the world is the price of this man's financial success. This man steals from the artistic and skillful dentist, for the reason that the skillful dentist had lifted the standard to such a high level that good fees were possible, while perhaps for the lack of business science and a knowledge of the law upon which it rests he himself has failed to receive a large fee. The man of science, the skillful dentist or the man who bends the knee at the shrine of professionalism is always within the limits of ethical conduct who shall maintain an elegant and well appointed office. If he shall surround

himself with artistic and useful things, he but reflects his own artistic tastes. If he has musical or literary accomplishments, if he has a warm social nature, if he has a trained mind and a true and charming personality, he has a perfect ethical right to any commercial values these may bring him. These are true values and justly belong to the professional man who may possess them. If they impress the patient by appealing to the imagination, the professional man is entitled to the benefit. If they are a factor in the sale of professional services, it is absolutely ethical. It is only the man who affects these for the one purpose of impressing his patients or to create the idea that he is superior to other dentists, that the indictment of quackery is laid against. A quack is a pretender, and the reason he seeks the professional field is because the laity are not judges of his goods until after he has sold them. Therefore, imagination as a factor in the sale of professional services may be used by the dentist without offending the ethical standard of his profession. If a professional man has dignity of character, if he surrounds himself with the refinements of an artistic taste, if he equips himself with all the up-to-date appliances for his work's sake, and the patient sees in the mirror of imagination a skillful and competent dentist, then both dentist and patient are on sound ethical ground. Imagination will not sell professional services a second time to the same person if the goods were spurious. After the services are sold, it is up to the professional man to make good, and he must not fail, for nothing else will now take its place. It is up to you to do, and what you do settles your future success. Imagination is a strangely potent force in human character. The experiment of the Oxford College boys is well known. They told a fellow that they would bleed him to death, and he actually died without the loss of blood; so you can scare a man to death. So much of a factor in human character is the imagination that the use of it in the sale of anything beyond a certain point is dangerous and unsafe to both buyer and seller. The only thing to sell anything with is truth. The results are accurate, well known and therefore scientific. Let the professional man study business science, grasp its fundamental principles and stand by the consequences. Let him make more money in less time by deserving larger fees. Thus he will not only give greater satisfaction to his patients, but he will increase the respect of his profession in the eyes of the world.—*Dental Review.*



MEETINGS

INSTITUTE OF DENTAL PEDAGOGICS.

The following officers were elected during the sixteenth annual meeting of the Institute of Dental Pedagogics, held in the Planters Hotel, St. Louis, December 30, 1908, to January 1, 1909:

President—Ellison Hillyer, Brooklyn, N. Y.

Vice-President—John Q. Byram, Indianapolis, Ind.

Secretary-Treasurer—B. E. Lischer, St. Louis, Mo.

Member Executive Board—D. H. Squire, Buffalo, N. Y.

Member Commission on Text-Books—H. E. Friesell, Pittsburgh, Pa.

Next place of meeting, Toronto, Canada, December 28 to 30, 1909.

B. E. LISCHER, Secretary-Treasurer.

MINNESOTA STATE BOARD OF DENTAL EXAMINERS.

The next regular meeting of the board for the examination of applicants for license to practice dentistry in Minnesota will be held at the dental department of the State University in Minneapolis, beginning on March 9, 1909, at 9 a. m.

All applications must be in the hands of the secretary by March 1, 1909. For further information address the secretary,

DR. GEO. S. TODD, Secretary,
Lake City, Minn.

ST. LOUIS SOCIETY OF DENTAL SCIENCE.

The St. Louis Society of Dental Science at the December meeting elected the following officers: Dr. W. E. Brown, president; Dr. Clarence O. Simpson, vice-president; Dr. G. E. Houru, secretary; Dr. C. S. Dunham, treasurer; Dr. A. H. Winkelmeyer, curator. Executive Committee—Dr. E. E. Haverstick, Dr. G. H. Westoff, Dr. E. J. Lenzen, Dr. Burton Lee Thorpe, Dr. A. H. Winkelmeyer. Advisory Council—Dr. G. A. Bowman, Dr. A. H. Tuller, Dr. D. O. M. Le Cron, Dr. Richard Summa, Dr. W. L. Whipple, Dr. H. F. Cassel, Dr. E. P. Dameron.

Yours fraternally,

G. E. HOURU.

MISCELLANEOUS

CIVIL SERVICE EXAMINATIONS.

Dates for examinations during 1909 have been fixed by the Illinois Civil Service Commission as follows:

May 6.—First assistant physician (promotional), assistant physician in hospitals for the insane, physicians, dental interne, medical interne.

Other examinations will be called by the commission, but the dates therefor have not been fixed.

Requests for applications and information should be addressed to the Illinois Civil Service Commission, Springfield, Illinois.

JOSEPH C. MASON, Chief Examiner.

COURT DECISION.

15887.

State of Minnesota. Supreme Court.

October Term, A. D. 1908. No. 42.

State of Minnesota, Respondent,

vs.

Ernest R. Taylor, Appellant.

A person who is licensed to practice medicine and surgery under the statutes of the State, cannot by virtue thereof practice dentistry without securing a license as a dentist as required by Ch. 117, G. L. 1907.

Order affirmed.

ELLIOTT, J.

TO REMOVE STAINS OF POTASSIUM PERMANGANATE.

(La Revue Internationale de Prothese Dentaire, Paris, Jan., 1908.)

These stains are removed by applying the following:

Hydrogen dioxide.

Solution of oxalic acid.

Solution of bisulphite of sodium.

The first is the best, and the last the less expensive.

TAKING IMPRESSIONS.

In cases which are extremely sensitive and easily nauseated, I have found it useful and helpful to sponge the mouth with hydrogen dioxide to clean the mucous surfaces, and then apply a solution of eucain to the whole palate. This will succeed in the most exaggerated cases of palatal sensitivity.—*J. B. Hartzell, Texas Dental Journal.*

TO TRIM AND STERILIZE COTTON.

In winding cotton on a broach it is apt to be extended a little beyond the end, and if not removed prevents the dressing proper from reaching remote parts of the root. To dispose of this tag end touch it to the flame; sterilization comes with the fire.—*Office and Laboratory.*

ORAL PROPHYLAXIS.

Phenol-Sodique has a great field of usefulness in combination with pulverized pumice stone in the work of oral prophylaxis. Its alkaline reaction together with its stimulative and antiseptic qualities produce the good results that are witnesses almost daily by those engaged in this line of work.—*E. T. Loeffler, Dental Register.*

FRACTURED TEETH.

In cases in which a sound tooth has been fractured by accident, and it does not seem advisable to restore the broken portion with porcelain, a gold restoration may be made by burnishing a piece of pure gold 36-gauge of suitable size and shape, over the fractured area. When this is done, two or more holes for pins are drilled, being careful that the drill holes penetrate the tooth parallel to each other, and far enough from the pulp, and also from the enamel so that no harm will result from that source.—*Dr. M. V. Hopkins, Register.*

METALLIC FILLINGS.

It must always be borne in mind in the insertion of metallic fillings in vital teeth, that an incompatible material is being placed in contact with the cut ends of the dentinal fibrillae, and that while these fibrillae are not, histologically speaking, nerve filaments, they do transmit sensations of chemical and thermal irritation to the pulp, which is, through this means, too often made the seat of degenerative processes. The conclusion is inevitable that in cavities of any depth, a layer of compatible, non-conducting material should be placed before inserting a metallic filling.—*J. O. McCall, Forum.*

ROOT DRYER.

Upon the appearance of the Evans Root Dryer it commended itself to me and I began its use. Coincident with its adoption my proportion of roots which developed trouble increased. The moment this was realized I discontinued its use and the ratio dropped again to normal.—*C. Edmund Kells, Jr., New Orleans, La., Dental Review.*

BIG MISTAKES.

Many men are making the biggest mistake of their lives in that they curtail the equipment of their offices. There is no money so well spent as that invested in good instruments, and in apparatus of any kind to further your operation. It will bring you business and give you the chance of doing again as much, if not five times the amount in the same time, and, besides, it is saving your vital energy.—*F. C. Van Woert, Items.*

HOLD ON TO WHAT IS PROVEN.

In dentistry, when we find we can do a thing, and do it well, we should hold to it until we find something better before we lay the old aside for the new. A good gold filling seems to be almost a lost art. Every dentist can select his own filling material, but he can not select his own choice of cavities or teeth to fill. He has to take what comes. In my town he can't be a specialist or enthusiast. The enthusiast is the one who grabs everything that has anything new about it, such as pulp capping, pulp mummification, white oxide of zinc paste for root-canal filling, archite cement, cataphoresis, and so forth.—*Dr. W. H. Green, Summary.*

BURNISHED FILLING.

I demonstrated that all burnished filling can be made just as hard as any malleted filling, and with a great deal less discomfort to both patient and operator. The trouble is that there are no special instruments made for burnishing. I had to make my own. I do not advise trying to burnish in all positions in the mouth, as it would take too long in awkward positions, but it can be done. Most of the men took little interest in the process of burnishing, thinking it a fad of mine, got up for conventions. I tell you it is neither a fake nor a fad. The only secret about it is in learning how much to anneal the gold, and how tight to press the burnisher.—*Dr. Mills, Dominion Dental Journal.*

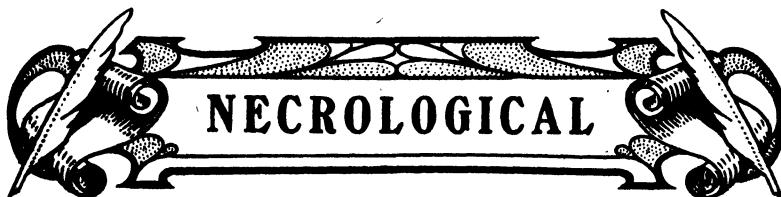
Fourth District Dental Society.—State President J. W. Lyons of Jackson, Vice-President G. H. Copp of Plainwell and Dr. M. L. Ward of the University of Michigan, chairman of the reorganization committee of the Michigan State Dental Society, were guests of the dentists of Kalamazoo when the Fourth district branch of the state society was organized. Kalamazoo, Allegan, Barry and Calhoun counties are included in the district. Officers of the district society are: president, Dr. S. M. Fowler, Battle Creek; vice-president, Dr. N. B. Hall, Kalamazoo; secretary, Dr. E. H. Toller, Battle Creek; treasurer, Dr. R. L. Gilkey, Kalamazoo.

APPEARANCE OF DENTIN.

The normal dentin under a high power glass resembles fine sand paper in appearance, and in building up the porcelain body that is to represent the dentin, the nearer we can approach that dull appearance, the nearer we can approach the appearance of the natural tooth when our work is completed. By not over-fusing the foundation body at any time in the process of constructing a crown or inlay, that dull appearance will be left, so that instead of all of the light being reflected a part of it will be diffused, and the conditions will more closely resemble the conditions of nature.—*Dr. C. J. Lyons, Register.*

TESTING AN ELECTRIC FURNACE.

Every user of an electric furnace should provide for testing his muffle in case of failure to operate. This is easily done by taking a few feet of the ordinary electric light wire connected with a plug at one end and a small copper or brass point on each of the other ends. One of these wires should be cut and a lamp put in. The lamp will light up when points are brought into contact with the two terminal wires in the muffle if the wire is not burned out or broken. Some such arrangement will also prove to be a very great help in locating a break in case of repair. Where the wire has burned out there will usually appear a spot, but a break will not show and a tester is indispensable. In the majority of cases the burn will occur within three or four inches of the negative end of the wire, due to the excessive heating of the wire at that point.—*F. E. Roach, Dental Review.*



NECROLOGICAL

Dr. T. L. Nicklin, a dentist formerly located in Portland, Ore., died at Salem, December 11.

Dr. C. H. Cone, a dentist at Sabinas, Mexico, died suddenly of pneumonia January 8 at Muzquiz.

Dr. Theophilus N. Neff, a dentist for many years in Carlisle, Pa., died December 19 at the age of 69.

Dr. John C. Allen, a dentist who had practiced in Cincinnati for 25 years, died December 10. Dr. Allen was 75 years old.

Dr. W. F. Templer, a dentist in Brantford, N. Y., walked from his office across the street to his residence and went into convulsions and died.

Dr. Aaron H. Parker, a dentist in Boston for 30 years, died January 5 at his home in Brookline, Mass. He was a graduate of the Harvard Dental School.

Dr. Thomas R. Durboraw, a dentist at Chambersburg, Pa., died January 9. He was 69 years old and had practiced his profession in that town for many years.

Dr. Clarence A. Race, a dentist in Portland, Maine, died at that place December 15. Dr. Race was 28 years old and was a graduate of Tufts College Dental School, class of 1901.

Dr. Peter A. Campbell, president of the Englewood Dental Society, Chicago, died January 15. Dr. Campbell was a graduate of the Northwestern University Dental School, class of '02, and was a member of the football team. He was 33 years old.

Dr. F. Edgar Thompson, a dentist at Durham, N. C., died suddenly from an overdose of laudanum at the home of his brother in Graham, N. C. He had been ill for nearly a year. Dr. Thompson was a graduate of the Northwestern University Dental School, class of '97.

Dr. F. R. Ross, a dentist at Kearney, Neb., dropped unconscious on the street from an attack of heart trouble, January 11, and expired almost immediately. He had moved to Kearney from Omaha in November. Dr. Ross was connected with the Omaha Dental School and was 59 years old at the time of his death.

Dr. L. L. Dunbar, who for ten years was dean of the Dental Department of the University of California, died December 30 at his home in Belvidere of heart disease. Dr. Dunbar was a graduate of the Ohio Dental College, class of '74, and was 59 years old at the time of his death. He was a member of the faculty of the Dental Department of the University of California and had practiced in San Francisco for 35 years.

PERSONAL AND GENERAL

Arrested.—A dentist who is located in Towner, N. D., was arrested in Grand Forks on a charge of passing worthless checks.

Sentenced for Life.—Dr. T. B. Birdsong, a dentist at Hazlehurst, Miss., who shot and killed Dr. A. B. Pitts in that town, pleaded guilty and was sentenced for life.

Dentist Injured.—Dr. J. Bird Moyer and his partner, John M. Hussey, were severally injured by an explosion of chemicals in their chemical laboratory in Philadelphia.

Marquette County Dental Association.—This society had its first meeting in Marquette and elected Dr. A. W. Hidle president and Dr. E. G. Robbins secretary and treasurer.

Dental Lavatories in Sleepers.—Dr. T. R. Crowder, superintendent of sanitation of the Pullman Company, makes the statement that dental lavatories will be installed in the sleeping cars.

Arrested on Charge of Manslaughter.—A dentist in Richmond, Maine, has been arrested on a charge of manslaughter in causing the death of a young woman by an alleged criminal operation.

Damage Suit.—A dentist in St. Louis has been made defendant in a suit for damages, a woman patient claiming damages for blood poison alleged to have been caused by the extraction of a tooth.

Dentist Sentenced.—A dentist in Portland, Ore., has been sentenced to serve five years in prison for causing the death of his fiancee by giving her bichloride of mercury in tablets. He has asked for a new trial.

Walks Many Miles.—Dr. Alfred Owre, the genial dean of the Dental Department of the University of Minnesota, and Dr. Forest H. Orton recently walked from Chicago to Minneapolis. The distance is 420 miles.

Swallows Plate.—Harry Pratt, an express messenger living at Cherokee, Iowa, is in a serious condition by having swallowed a plate with three teeth while asleep. Physicians have so far been unable to afford relief.

Shoots Wife and Child.—A dentist in Cameron, W. Va., shot his wife and two-year-old child December 24. The child died, but the wife may recover. He attempted to shoot himself, but was prevented by the wounded wife.

Fires.—Fire in the office of Dr. M. R. Lambat, Wooster, Ohio, caused a loss of \$75. Dr. H. S. Kneeland, at Cadillac, suffered a considerable loss through fire which caused a loss of \$10,111 to the building in which his office was located.

New Dental Society.—The First District Dental Society was organized December 23 at Logan City, Utah, the first officers of the new society are: President Dr. I. P. Stewart; vice-president, Dr. D. P. Thomas; secretary and treasurer, Dr. S. B. Thatcher.

Bankrupts.—H. Cameron Easterbrook, New York City; liabilities, \$16,667; nominal assets, \$750. J. A. Kleiser, San Francisco, Cal.; liabilities, \$7,602; assets, cash, \$3.25; negotiable paper, \$25. C. B. Scudder, Randolph, N. Y.; debts, \$29,080.50; assets \$574.82.

Columbia County Society.—The Columbia County Dental Society, organized at Portage, Wis., December 21, with Dr. Oviatt of Columbus president; W. E. Gochneaur, Portage, vice-president; E. J. Blass, Portage, secretary, and Dr. Kesler, Kilbourn, treasurer.

Rock Island Dental Society.—The Rock Island County Dental Society met December 18 and elected the following officers for the ensuing year: President, Dr. C. L. Silvis; vice-president, Dr. R. B. Hinnan; secretary, Dr. H. G. Trent, Rock Island; treasurer, Dr. C. W. Peterson.

Pa's Dentist Bill.—“I guess paw must have passed a lot of time at the dentist's when he was in New York,” said Johnny Green. “Why do you think so?” queried his ma. “'Cause I heard him tell a man today that it cost him nearly \$800 to get his eye teeth cut,” replied Johnny.—Boston Post.

Robbed His Employer.—A negro porter in the employ of Dr. H. C. Davidson, proprietor of a dental depot and laboratory at New Orleans, has confessed to having systematically robbed his employer, the total amount being about \$700. He was an old employe and had the implicit confidence of Dr. Davidson.

Dental Thief Caught.—Edwin C. Williams was arrested at Elgin, Ill., January 8, suspected of being the man who had robbed the dentists in a number of Illinois towns. Williams said he lived in Chicago, had done time at Chester and that he had been sent up from Belleville for robbing dental offices in 1905, according to the Waukegan (Ill.) Sun.

Dr. G. V. I. Brown Recovering.—Dr. G. V. I. Brown of the Iowa University School, is improving after a dangerous illness of blood poisoning, at his home in Milwaukee. A slight wound on a finger became infected, after he had performed an operation for cleft palate, and his life was imperiled for a time. He has been unable to attend to his duties at S. U. I. for several weeks, but will soon be able to leave Milwaukee.

Macon-Moultrie Dental Society.—At the meeting of the Macon-Moultrie Dental Society held in Decatur, Ill., Dr. J. F. F. Waltz was elected president. The business session followed a dinner at Greider's cafe. The other officers elected were: Vice-president, Dr. S. T. Butler of Sullivan; secretary-treasurer, Dr. C. Leonard Cassel; librarian, Dr. Hugh Vaughan. Dr. Butler read a paper on “The Conservation of Nerve Force in the Dentist.” Dr. Kyner of Moweaqua opened the discussion.

Oldest Dentist Awheel.—Dr. Jesse Cope Green, a dentist in West Chester, Pa., recently celebrated his ninety-second birthday and notwithstanding his advanced age still continues the practice of his profession and rides a bicycle almost daily to and from his office.

New Dental Society.—A new dental society to be known as the Central Wisconsin Dental Society, has been organized by Dr. H. B. Conlin of Wausau, at which place the meeting was held, presided and was elected present of the new society and Dr. J. E. McKahn was made secretary and treasurer.

Fox River Valley Dental Society.—Held its annual meeting in Geneva December 16 and elected the following officers for the ensuing year: President, Dr. C. C. Thomas of Aurora; vice-president, Dr. G. O. Kerfoot, Batavia; secretary and treasurer, Dr. E. B. George, Geneva. Dr. O. B. Chappell of Elgin read a paper on the subject of dental fees.

Warning to Dental Dealers.—Should a young man formerly employed by the John T. Nolde Dental Manufacturing Company of St. Louis apply to any dental house for a position, said house may hear of something to its advantage by writing to the above named firm or to The American Dental Journal before employing this foxy individual.

Peoria County Dental Society.—The Peoria County Dental Society, a part of the Illinois State Dental Society held its annual meeting and election of officers at Peoria January 5. Dr. R. H. Daniels of Peoria was chosen president to succeed Dr. Malick of Eureka. Other officers chosen were: E. A. Morrow, Washington, vice-president; C. M. Smith, secretary; R. L. Snowden, treasurer, and D. Nicol, librarian.

Luzerne and Lackawanna County Society.—Members of the Luzerne and Lackawanna County Dental Association held a meeting December 21 at the office of Dr. Schofield, in Wilkesbarre, Pa. The election of officers for next year was held and the following were elected and installed: President, Dr. H. D. Matten, Wilkesbarre; vice-president, Dr. O. R. Richards, Moosic; secretary, Dr. E. J. Donnegan, Scranton; treasurer, Dr. D. G. Gardner, Scranton.

Marriages.—Dr. Daniel Hally-Smith of Paris, France, and Miss Laura Berkeley Perrin of Waukegan, Ill. Dr. Martin Hauser Mortonson, Clear Lake, Iowa, and Miss Birdgena Bergeison, Leland, Ill., at the latter place, November 26. Dr. Thomas E. Shuford, Memphis, Tenn., and Miss Marie Davidson, Chicago, December 31. Dr. A. S. Cork, Chicago, and Miss Helen Jenkins. Dr. Roy R. Bode, Marietta, Ohio, and Georgia Calhoun, East Liverpool, December 22. Dr. Charles A. Faulkner, Oakland, Cal., and Miss Louise E. Bernard, Alameda, Cal., December 21. Dr. Arthur A. Jennings, Milwaukee, and Miss Rebecca Keough, same, December 16. Dr. Lewis E. Joran, Ottawa, Ill., and Miss Madeline Crossen of Cobourg, Canada, engaged. Dr. Omar Barshness and Miss Rose Steichen, both Milwaukee, Wis., December 16.

Rochester Report.—The December report of the Rochester Health Association has been prepared. The work in the dental dispensary and the tuberculosis part of the association's activities was considerable, according to the figures. The report follows: Dental clinic—Number of patients, 157; old patients, 115; new patients, 42; treatments, 62; fillings, 183; extracted, 71.

Bleeds to Death From Extraction.—John Burke, age 21, is dead in Youngstown, Ohio, as a result of hemorrhage caused by the extraction of two teeth. The dentist who performed the operation attended the patient for four days and nights in an attempt to stop the flow of blood, and at one time was successful for sixteen hours. The patient had had a brother die when three years old whose death was caused from having a slight puncture in the palm of the hand produced by a lead pencil.

Death Reveals Secret Wedding.—John A. Taylor, a dental student in St. Louis, had planned a family reunion in St. Louis, whereat his parents were to learn of his secret wedding to Miss Mary Skinner of Niles, Tex., more than a year ago, and the birth of a child three weeks ago. Mrs. Taylor died December 19 and Taylor's Christmas was spent in grieving with her parents in Texas, whither Taylor went with his wife's body Sunday. Taylor's parents, who live in Sparta, were only apprised of their son's marriage by a request that they care for a motherless baby, which cost the young wife's life.

Dr. E. J. Roberts Honored.—The Augusta house, in Augusta, Maine, was the scene of a very pleasant affair December 17, when the members of the State Dental Examining Board, Dr. D. W. Fellows of Portland, Dr. L. S. Chilcott of Bangor, Dr. E. C. Bryant of Pittsfield, Dr. W. S. Payson of Castine and Dr. E. L. Hall of Augusta, and ex-Members Dr. F. O. Sawyer of Skowhegan and R. B. Miller of Roxbury, Mass., gave a banquet in honor of Dr. E. J. Roberts of this city, who retired as a member at the expiration of his term this year, it being the sixth appointment made him by the governor. Dr. Roberts had served since the first organization of the board, was chosen the first president of the board and each year re-elected to the same office, seventeen years successively.

Lockjaw Relieved by Extraction.—A. H. Koetz, who was thrown to the ground when a twenty-foot electric light pole on which he was at work snapped, has had a remarkable experience in recovering. In the fall some of his teeth were jarred and others had the filling knocked out. When he was thought to be recovering his jaws suddenly locked and remained so for nine days. Medical skill was puzzled until a dentist suggested that the trouble was caused by an injury to the molars which affected the glands of the neck. Koetz's mouth was pried open little by little and corks placed between his front teeth until the dentist, Dr. F. S. Walls, could apply his forceps to the molars and remove them. The young man is now recovering rapidly.

Removals.—Drs. W. G. Ruckenbrod, from Quincy, Ill., to Beaver City, Utah; Anna Swinney, from Roachdale, Ind., to Minneapolis, Minn.; A. A. Harris, from Brookings, S. D., to Minneapolis, Minn.; J. C. Garver, from Jefferson, Iowa, to Sterling, Ill.; J. G. Pollock, from Freeport, Ill., to Sterling; John Kelly, Jr., from Omaha to Central City, Neb.; S. H. Baker from Ft. Wayne, Ind., to Los Angeles, Cal.; H. S. Frost, from Dover, Maine, to Bangor; J. E. Hancock, from Chicago, Ill., to Little Rock, Ark.; M. W. Follansbee, from Saco, Maine, to Waldoboro, Maine; H. F. Thacker from Middleboro, Ky., to Appalachia, Va.; W. F. Lemon, from Rock Falls, Ill., to Ashton, Ill.

Robberies.—Drs. Becker, Taylor and Keene, Owensboro, Ky., loss \$310. A. J. and J. P. Bass, St. Joseph, Mo., loss \$40. Three dentists in North Yakima, Wash., names and amounts not given. C. E. Heseman, Riverside, Cal., loss \$250. H. E. Holaday and E. McDonald, Hutchinson, Kas., loss 75. G. W. Frank, Parsons, Kas., loss \$18; Hugh Morgan, Youngstown, Ohio, loss not given. W. P. Lindsley, Cincinnati, Ohio, loss \$10. L. D. Hodge, Arkansas City, Kas., loss \$100. Leslie S. Tucker, Ft. Wayne, Ind., loss \$38. E. D. Slawson, F. A. Krapohl, H. L. Pearsall, and L. C. Smith at Bay City, Mich., aggregate loss \$100. J. H. Herman, H. S. Rogers and C. D. Peck, at Sandusky, Ohio, loss not given.

State Board Affairs.—The Supreme court of Minnesota, affirming the lower courts, has decided that without a license from the State Dental Board a physician cannot practice dentistry. A dentist was recently arrested for illegal practice at Rushville, Ill. He was one of the street varieties practicing from a buggy seat. The license of a dentist at Kansas City has been revoked by the State Board because of alleged unprofessional conduct. Conviction in the case of a dentist in Sioux Falls, S. D., has been reversed in the Supreme court on a writ of error, the dentist had been fined \$100 and sentenced to 20 days in jail. The case has been in the courts for four years. Dr. A. J. Sawyer, secretary of the New Hampshire State Board, announces the names of four applicants who were successful in the recent examinations. The State Board of California at its December meeting passed 38 applicants, including one woman, and rejected 23. Dr. A. B. Mayhew is president and Dr. C. A. Herrick secretary. Ten applicants failed to pass examinations at the meeting of the New Jersey state board recently. Dr. W. W. Evans has resigned as member of the board of the District of Columbia and has been succeeded by Dr. C. W. Cuthbertson. Dr. Evans has moved to Virginia, hence his resignation. Dr. Edward J. Roberts, who has been president of the Maine State Board for seventeen years, has retired from the board.



DENTAL PATENTS

Fig. 1.

905,479. Hinge for Dental Articulators. Rudolph Sykora, Boston, Mass. Filed May 28, 1908. Serial No. 435,534. A hinge connection for dental articulators comprising two members each of which is formed of an integral piece, one of said members having a straight central body portion terminating at each end in a loop bent substantially at right angles with said body portion and having a contracted throat, said loops each terminating in a branch adapted for engagement with one of the parts which are to be connected together, the other member of said hinge.

Fig. 2.

905,535. Dental Appliance. Erwin E. Holmes, Indianapolis, Ind., assignor of one-fourth to George E. Coburn, one-fourth to Ida A. Holmes, and one-fourth to Grant H. Clay, Indianapolis, Ind. Filed August 13, 1907. Serial No. 388,307. 1. A device for taking impressions or bites for artificial teeth comprising a plurality of base-plates for holding the wax in divided parts, and means for pivotally securing said plates a distance from their ends.

Fig. 3.

888,297. Combined Rubber Dam and Tooth-Backing Punch. Harry M. Bell, Houston, Tex. Filed January 21, 1907. Serial No. 353,404. A device of the type set forth comprising upper and lower flat faced members having crossed pivoted handles, a spring interposed between said handles and tending to force the members normally apart, the upper member being formed with a longitudinal recess of hour glass shape extending from the front edge thereof, conformably shaped blocks detachably engaged in said recess, pins carried by said blocks and pointing toward the lower member, the lower member being formed with a dovetail recess extending longitudinally from the front edge thereof and a bed of hard cork disposed in said recess.

Fig. 4.

888,071. Dental Crown-Heater. Edward W. Dodez, Fort Wayne, Ind. Filed July 8, 1907. Serial No. 382,795. In a dental crown heater a metallic bulb having in its upper portion a surface provided with a configuration adapted to engage a corresponding configuration on a tooth crown for the uses and purposes described.

Fig. 5.

888,310. Dental Dam-Holder. Claude A. Conover, Newburgh, N. Y. Filed June 3, 1907. Serial No. 377,066. A dental dam holder having de-

tachable pads of a yielding material adapted for engagement with the face of the wearer.

Fig. 8.

906,977. Suction Device for Dental Plates. George S. Whittaker, Gloversville, N. Y. Filed June 29, 1908. Serial No. 440,909. 1. A

FIG. 1

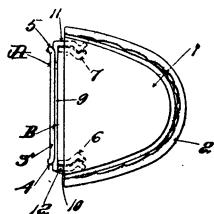


FIG. 4

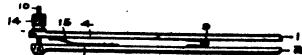


FIG. 2



FIG. 5



FIG. 3

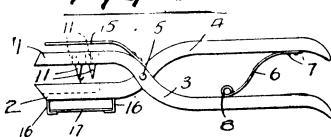
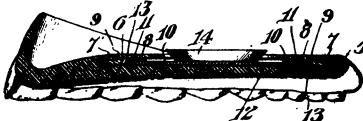


FIG. 6



structure of the character set forth, comprising a dental plate, a holding ring embedded in the plate and having an outset flange spaced from the plate, and a yielding suction device independent of the plate, and having its marginal portions detachably engaged beneath the flange in the space between the same and the plate.

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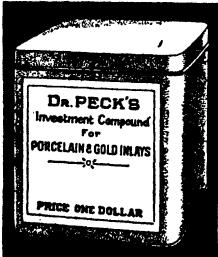


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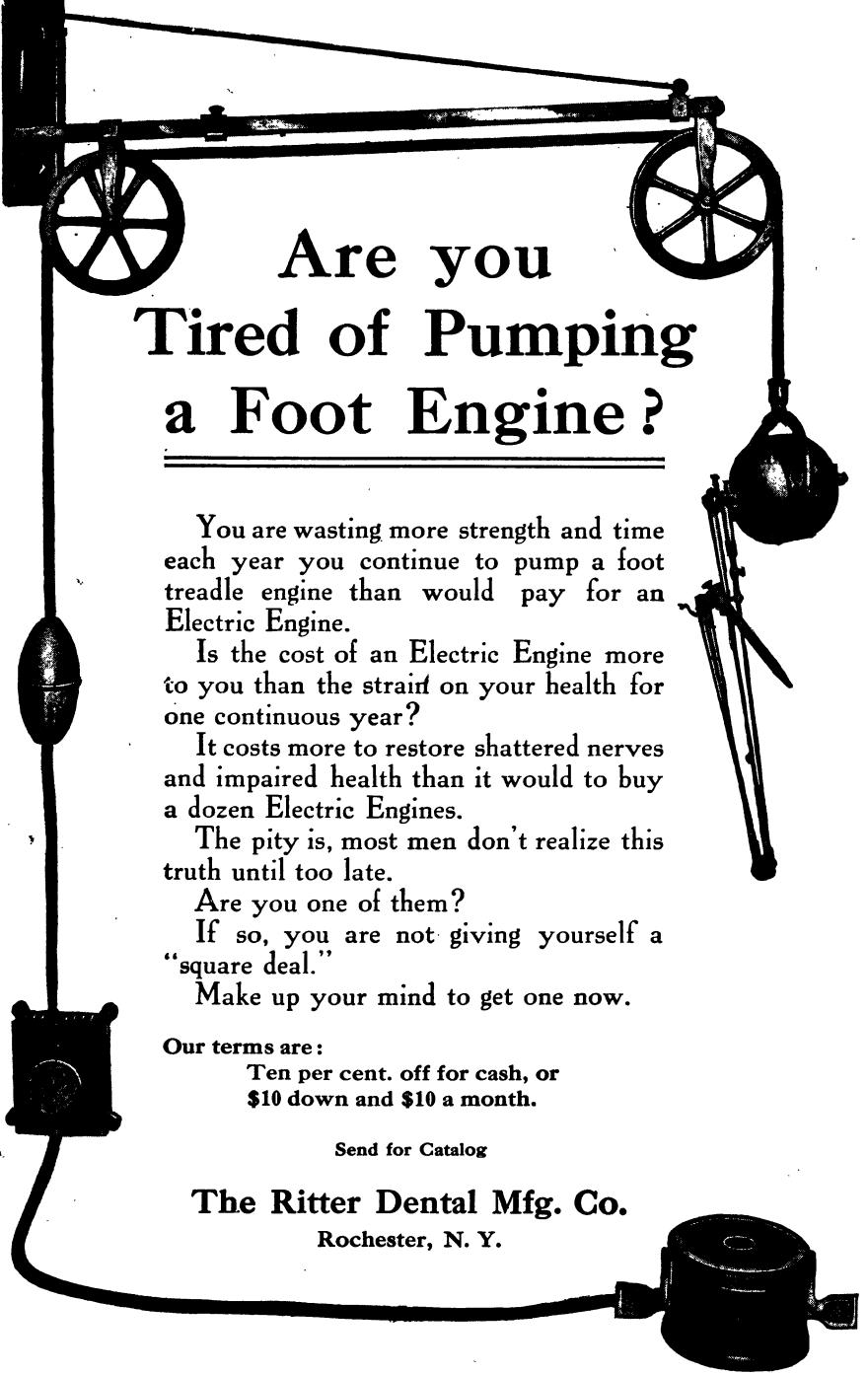
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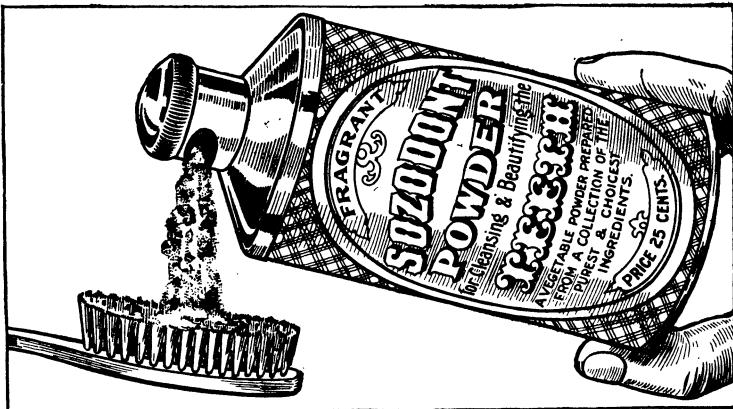
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